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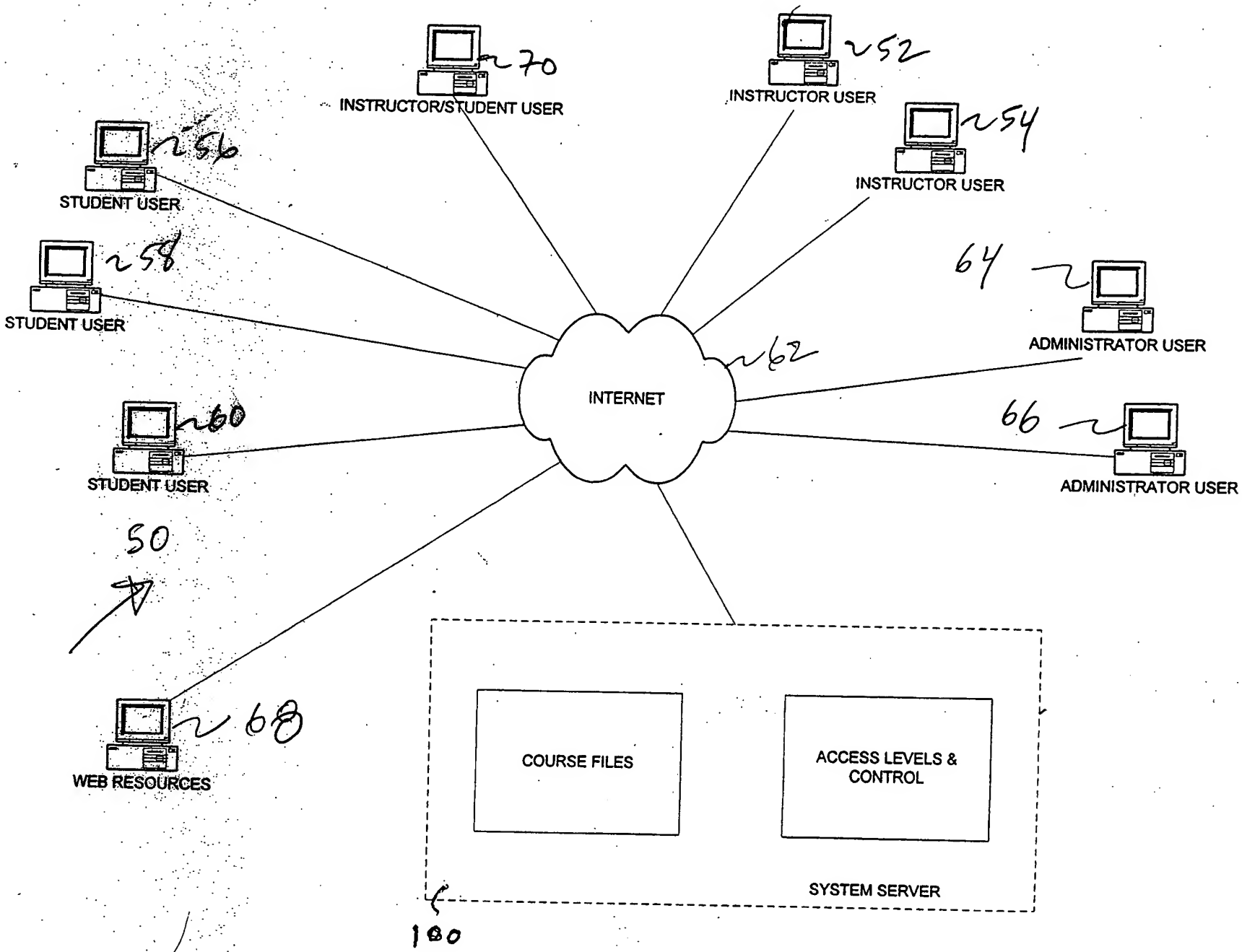

INSTRUCTOR/STUDENT USER
70
INSTRUCTOR USER
52
INSTRUCTOR USER
54
STUDENT USER
56
STUDENT USER
58
64
ADMINISTRATOR USER
INTERNET
62
STUDENT USER
60
66
ADMINISTRATOR USER
50
WEB RESOURCES
68
COURSE FILES
ACCESS LEVELS & CONTROL
SYSTEM SERVER
100

FIG. 1A

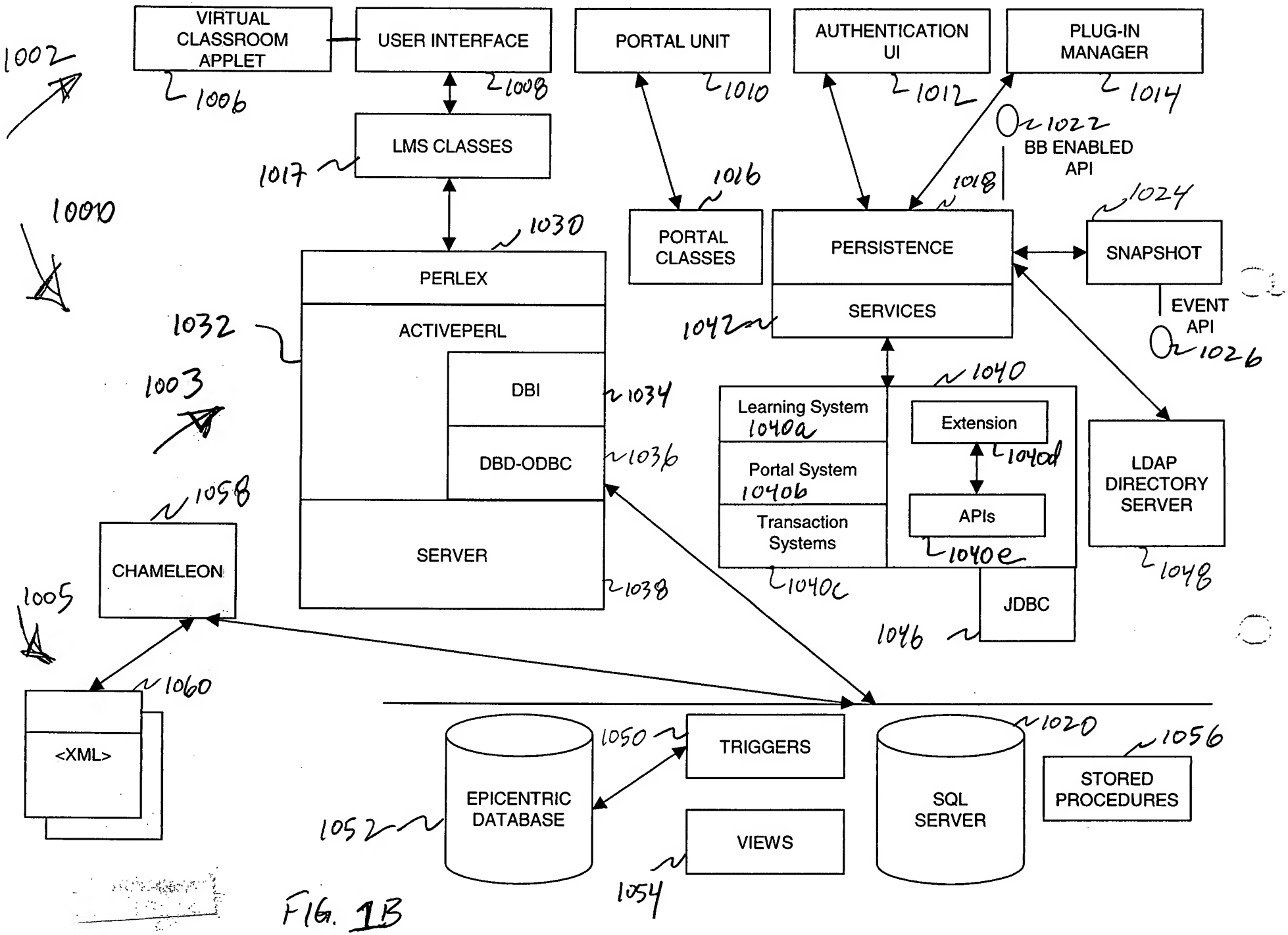

1002
VIRTUAL CLASSROOM APPLET
1006
USER INTERFACE
1008
PORTAL UNIT
1010
AUTHENTICATION UI
1012
PLUG-IN MANAGER
1014
1022
BB ENABLED API
LMS CLASSES
1017
1016
1018
1024
1000
1030
PORTAL CLASSES
PERSISTENCE
SNAPSHOT
PERLEX
SERVICES
EVENT API
1026
1032
ACTIVEPERL
1042
1003
DBI
1034
1040
Learning System
1040a
Extension
1040d
LDAP DIRECTORY SERVER
DBD-ODBC
1036
Portal System
1040b
1058
APIs
1040e
Transaction Systems
1040c
CHAMELEON
SERVER
1038
1005
JDBC
1046
1048
1060
<XML>
1050
TRIGGERS
1020
1056
STORED PROCEDURES
EPICENTRIC DATABASE
1052
SQL SERVER
VIEWS
1054

FIG. 1B

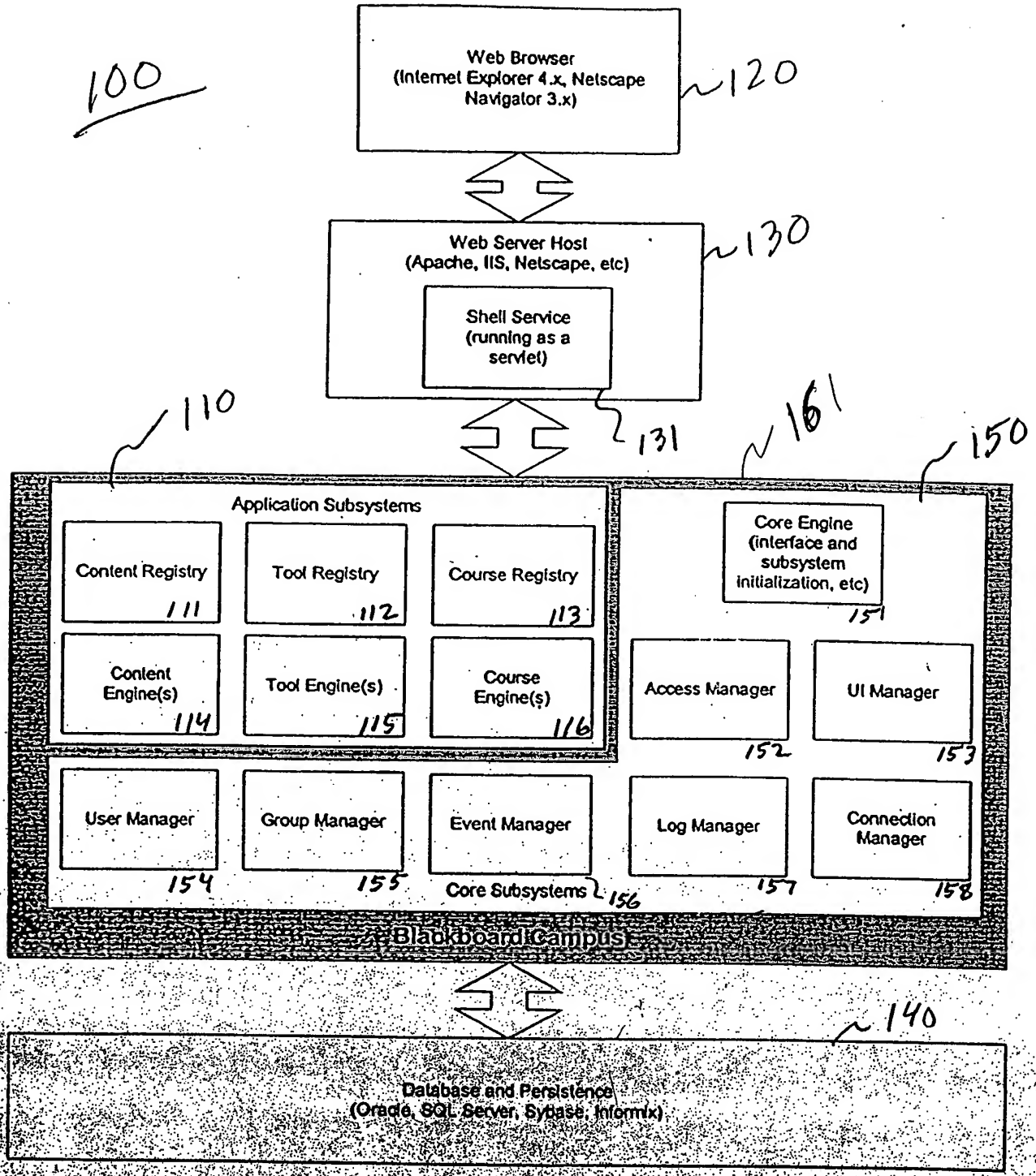

100
Web Browser
(Internet Explorer 4.x, Netscape Navigator 3.x)
120
Web Server Host
(Apache, IIS, Netscape, etc)
130
Shell Service
(running as a servlet)
131
110
161
150
Application Subsystems
Content Registry
111
Tool Registry
112
Course Registry
113
Content Engine(s)
114
Tool Engine(s)
115
Course Engine(s)
116
Core Engine
(interface and subsystem initialization, etc)
151
Access Manager
152
UI Manager
153
User Manager
154
Group Manager
155
Event Manager
Core Subsystems
156
Log Manager
157
Connection Manager
158
Blackboard Campus
140
Database and Persistence
(Oracle, SQL Server, Sybase, Informix)

FIGURE 1C

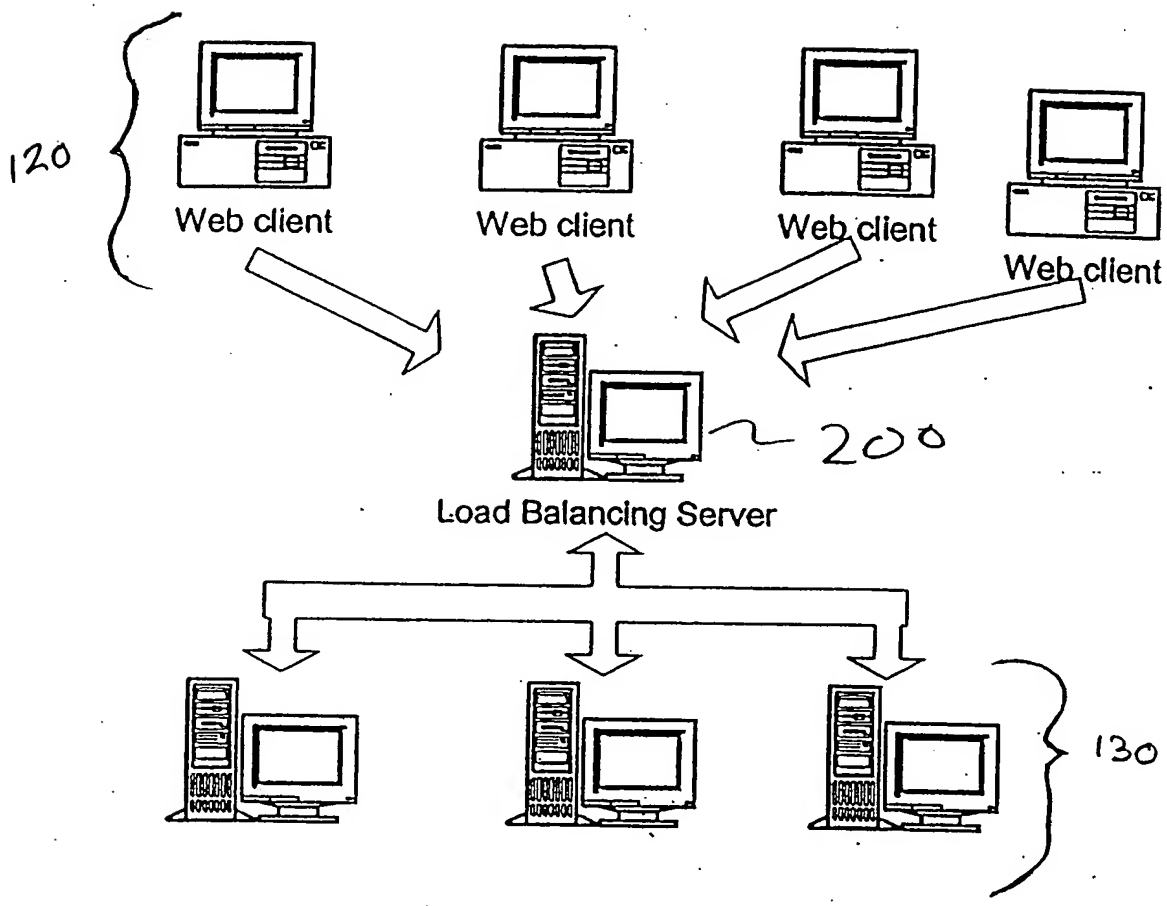



*Figure 2 —Machine Scalability Using Load Balancing*

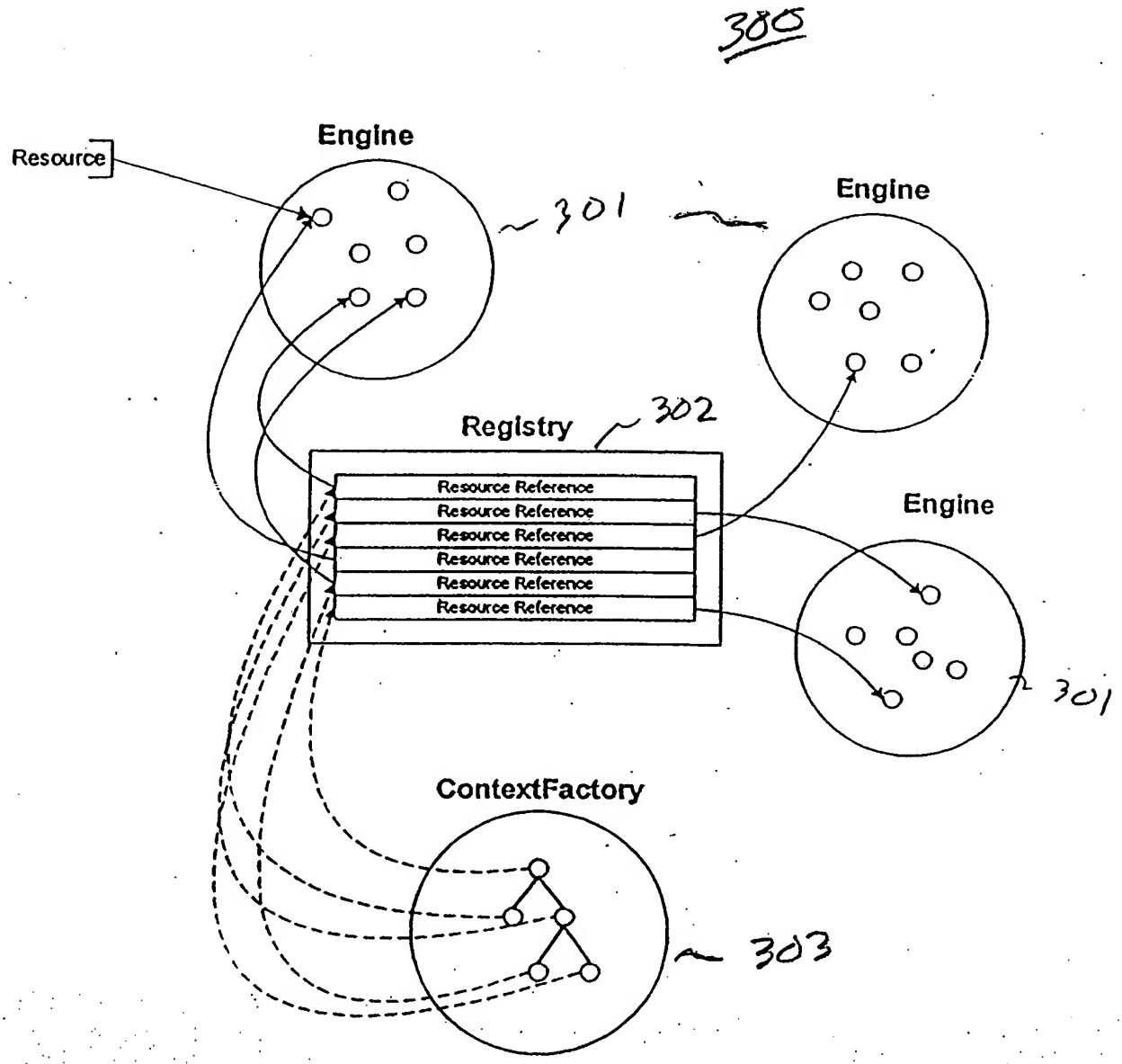



*Figure 3 -- Engine/Registry Model*

400

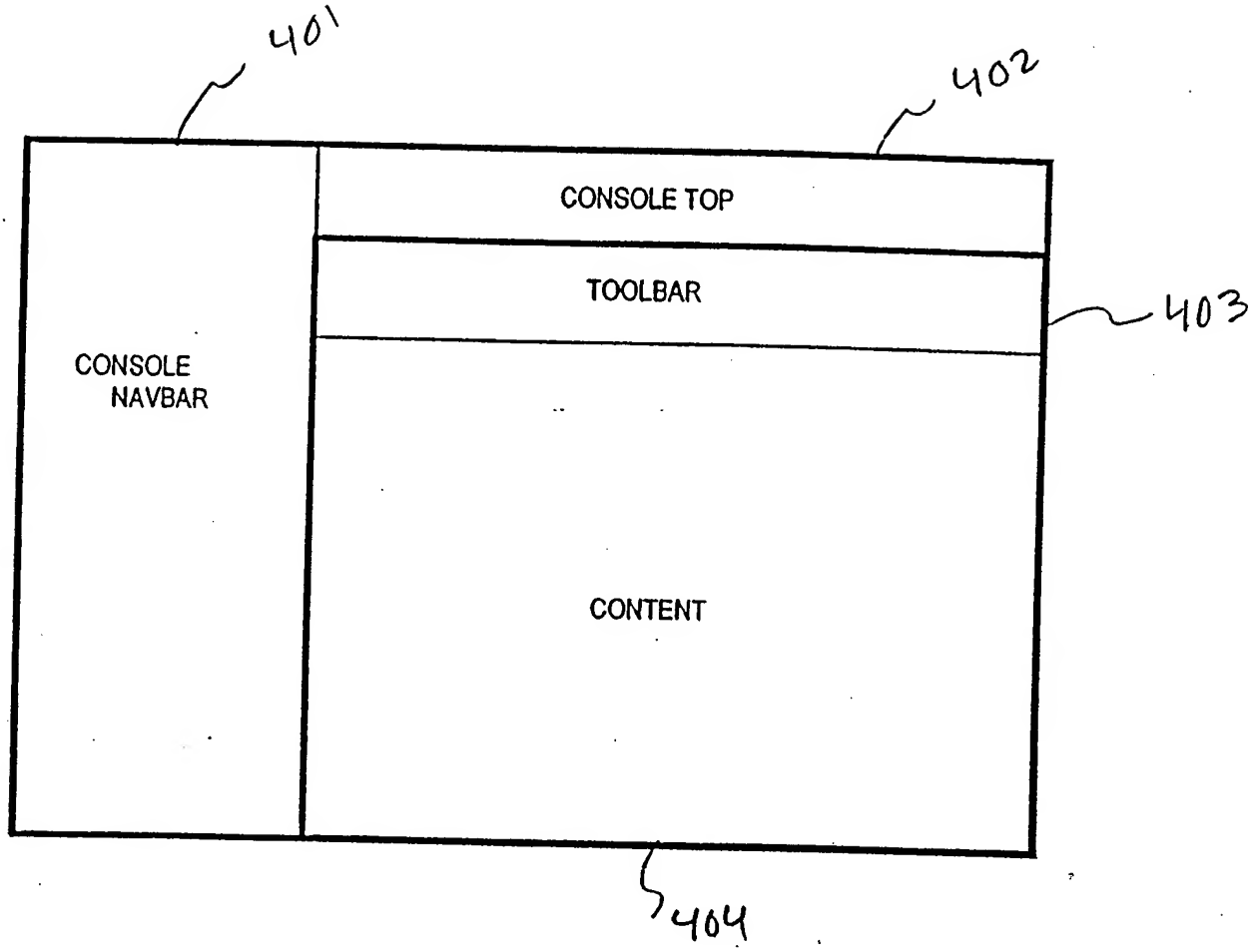



FIGURE 4

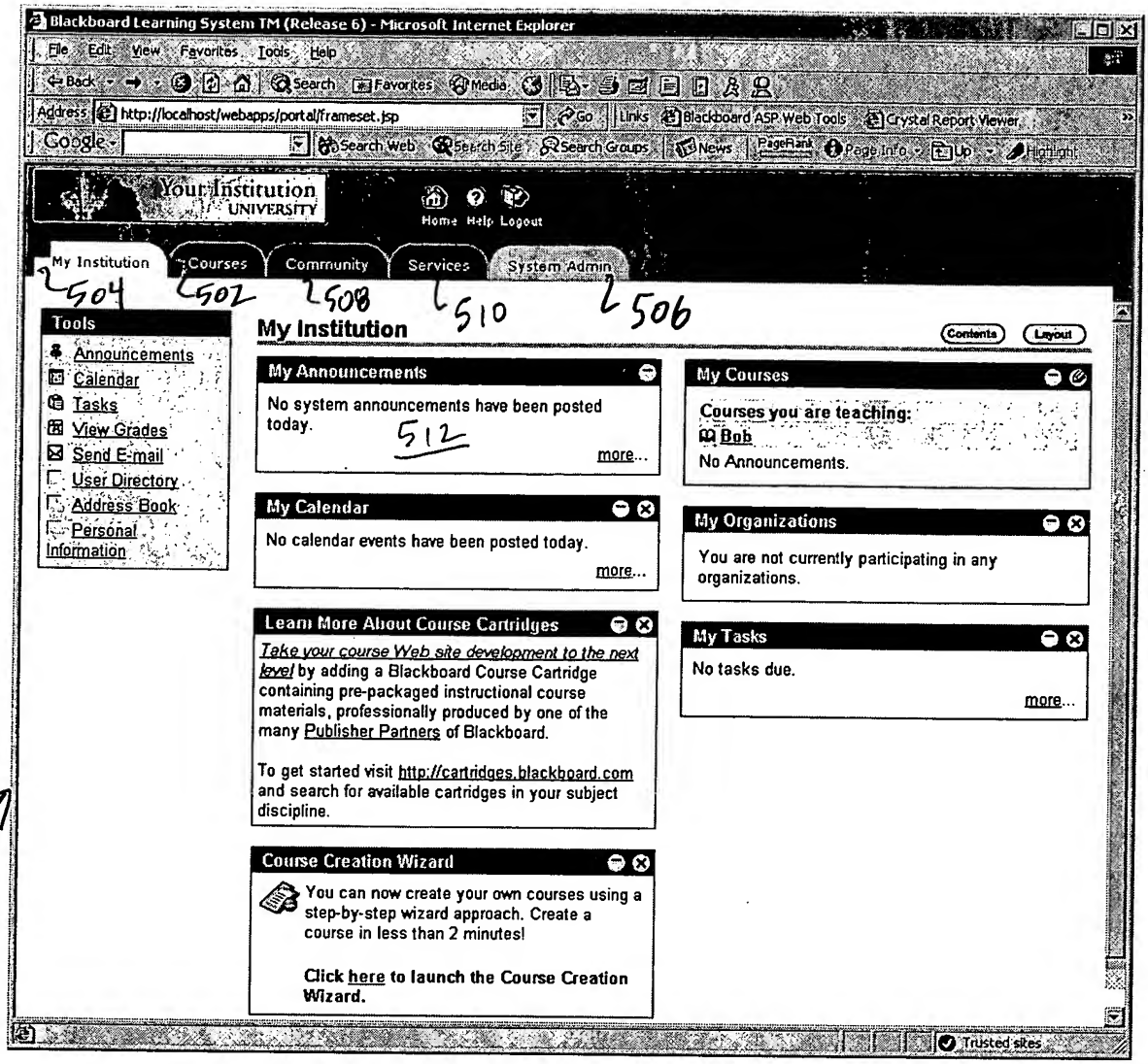

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://localhost/webapps/portal/frameset.jsp
Your Institution UNIVERSITY
Home Help Logout
My Institution
Courses
Community
Services
System Admin
504
502
508
510
506
Tools
Announcements
Calendar
Tasks
View Grades
Send E-mail
User Directory
Address Book
Personal Information
My Institution
Contents
Layout
My Announcements
No system announcements have been posted today.
512
more...
My Courses
Courses you are teaching:
Bob
No Announcements.
My Calendar
No calendar events have been posted today.
more...
My Organizations
You are not currently participating in any organizations.
Learn More About Course Cartridges
Take your course Web site development to the next level by adding a Blackboard Course Cartridge containing pre-packaged instructional course materials, professionally produced by one of the many Publisher Partners of Blackboard.
To get started visit http://cartridges.blackboard.com and search for available cartridges in your subject discipline.
My Tasks
No tasks due.
more...
Course Creation Wizard
You can now create your own courses using a step-by-step wizard approach. Create a course in less than 2 minutes!
Click here to launch the Course Creation Wizard.
Trusted sites
500

FIG. 5

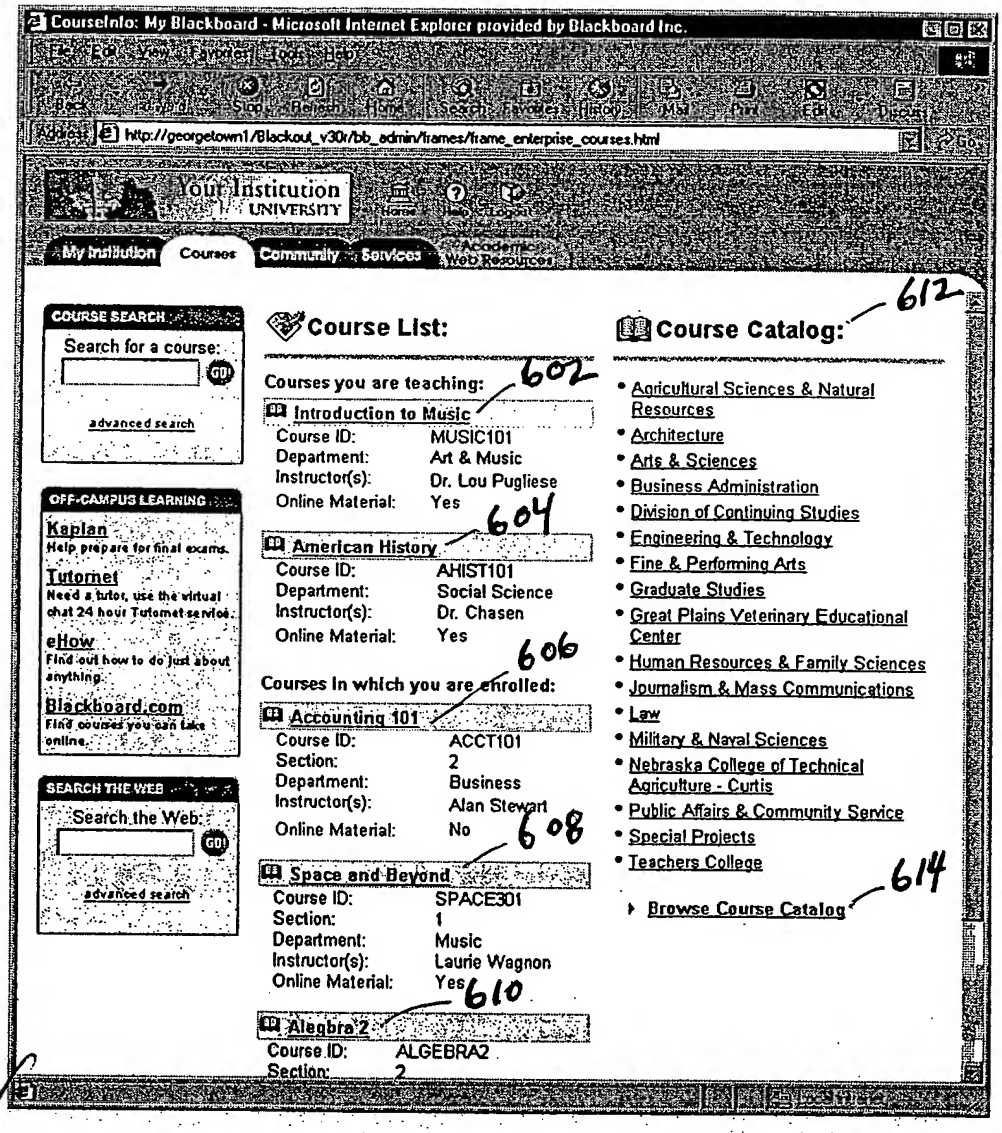

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://georgetown1/Blackout_v30r/bb_admin/frames/frame_enterprise_courses.html
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
COURSE SEARCH
Search for a course:
GO!
advanced search
OFF-CAMPUS LEARNING
Kaplan
Help prepare for final exams.
Tutornet
Need a tutor, use the virtual chat 24 hour Tutornet service.
eHow
Find out how to do just about anything.
Blackboard.com
Find courses you can take online.
SEARCH THE WEB
Search the Web:
GO!
advanced search
Course List:
Courses you are teaching:
602
Introduction to Music
Course ID: MUSIC101
Department: Art & Music
Instructor(s): Dr. Lou Pugliese
Online Material: Yes
604
American History
Course ID: AHIST101
Department: Social Science
Instructor(s): Dr. Chasen
Online Material: Yes
606
Courses in which you are enrolled:
Accounting 101
Course ID: ACCT101
Section: 2
Department: Business
Instructor(s): Alan Stewart
Online Material: No
608
Space and Beyond
Course ID: SPACE301
Section: 1
Department: Music
Instructor(s): Laurie Wagnon
Online Material: Yes
610
Alegbra 2
Course ID: ALGEBRA2
Section: 2
Course Catalog:
612
Agricultural Sciences & Natural Resources
Architecture
Arts & Sciences
Business Administration
Division of Continuing Studies
Engineering & Technology
Fine & Performing Arts
Graduate Studies
Great Plains Veterinary Educational Center
Human Resources & Family Sciences
Journalism & Mass Communications
Law
Military & Naval Sciences
Nebraska College of Technical Agriculture - Curtis
Public Affairs & Community Service
Special Projects
Teachers College
Browse Course Catalog
614
600

FIG. 6

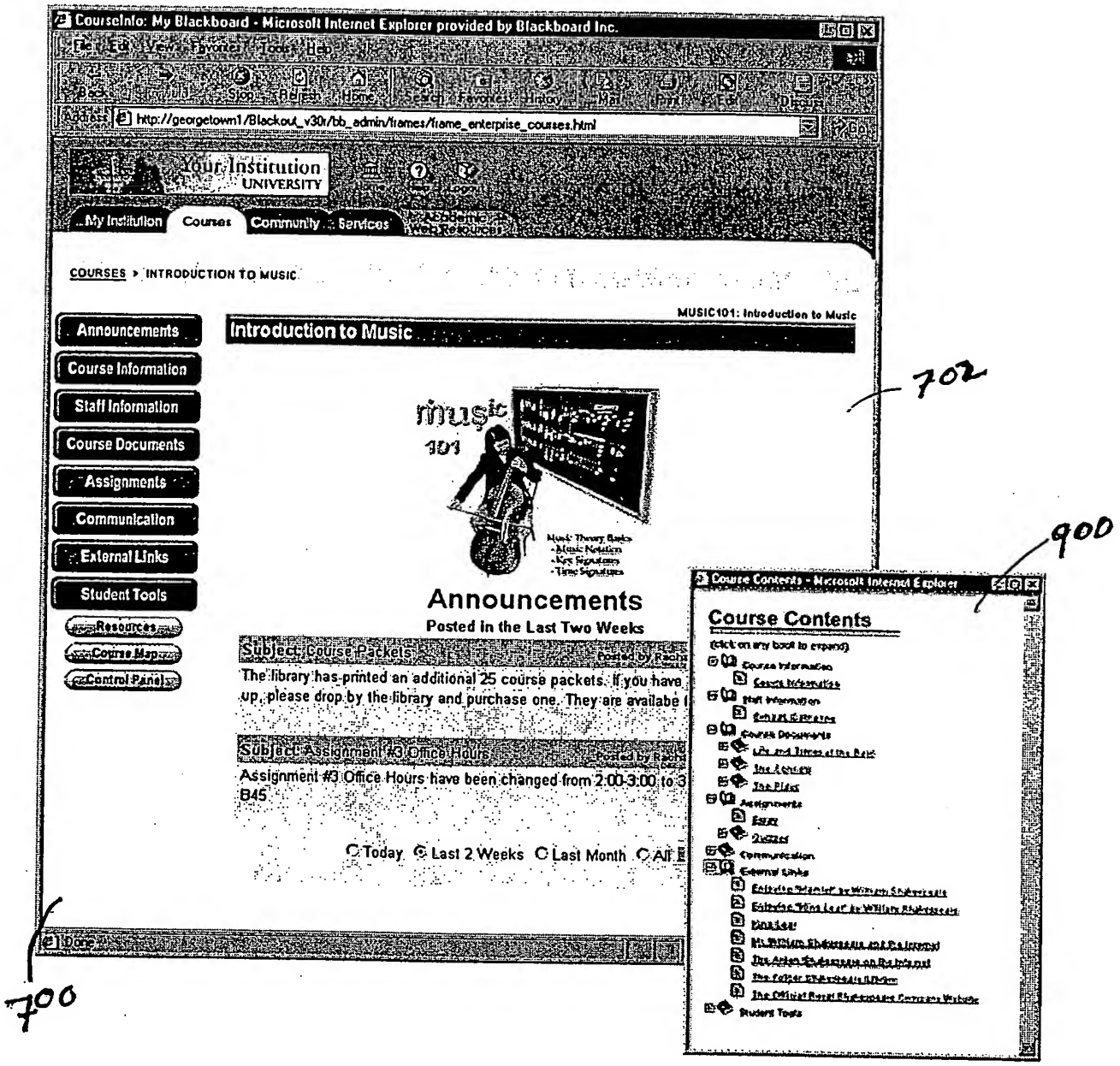
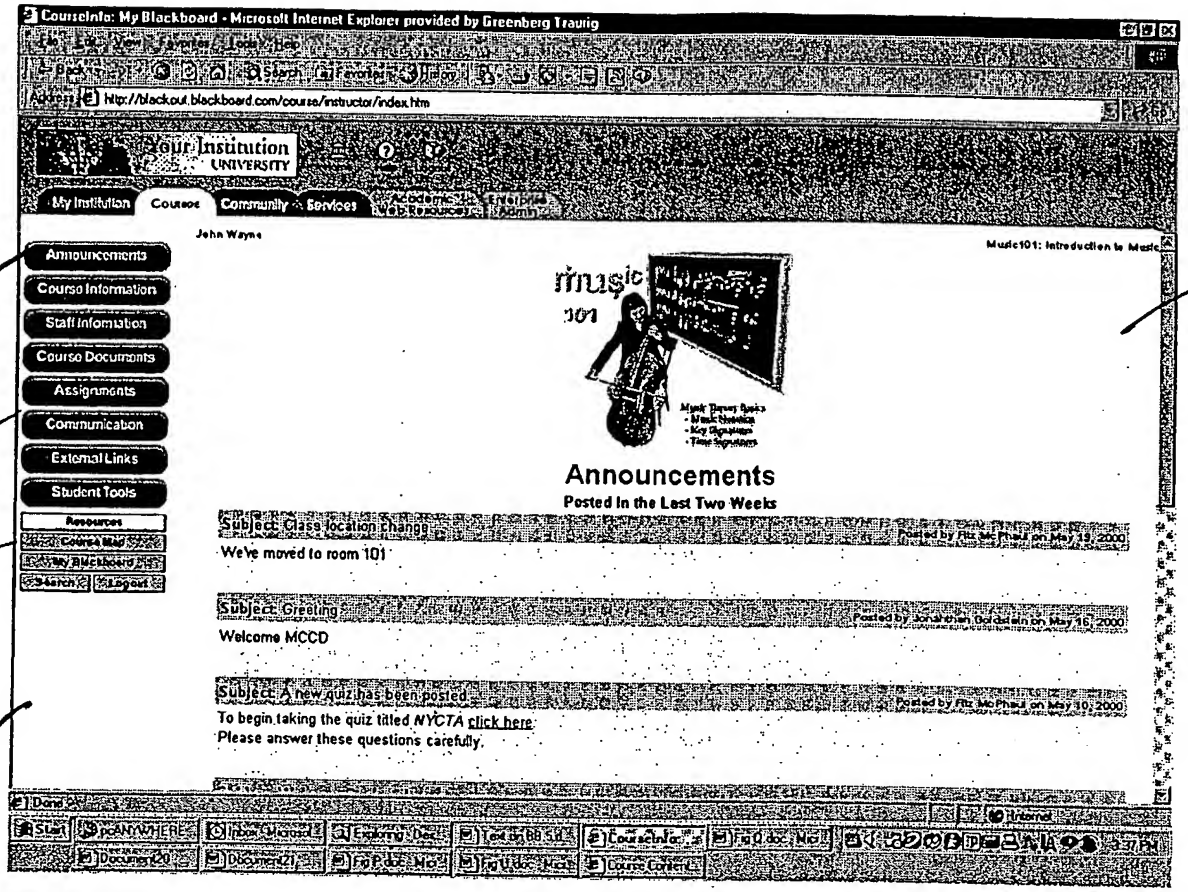
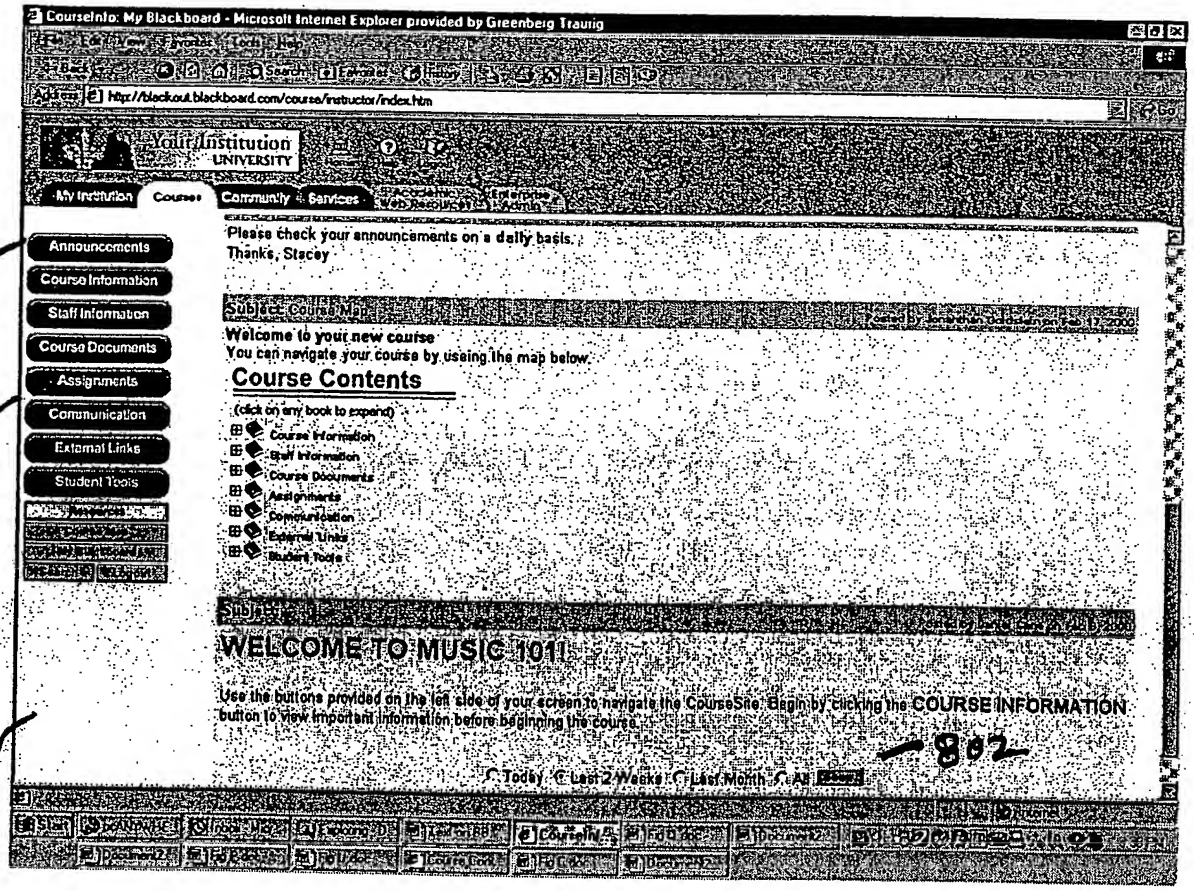

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://georgetown1/Blackout_v30r/bb_admin/frames/frame_enterprise_courses.html
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
COURSES > INTRODUCTION TO MUSIC
MUSIC101: Introduction to Music
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Resources
Course Map
Control Panel
Introduction to Music
music 101
Announcements
Posted in the Last Two Weeks
Subject: Course Packets
The library has printed an additional 25 course packets. If you have
up, please drop by the library and purchase one. They are availabe
Subject: Assignment #3 Office Hours
Assignment #3 Office Hours have been changed from 2:00-3:00 to 3
B45.
Today
Last 2 Weeks
Last Month
Course Contents - Microsoft Internet Explorer
Course Contents
(click on any book to expand)
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Done
700
702
900

Fig. 7


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/course/instructor/index.htm
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
John Wayne
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Resources
Announcements
Posted in the Last Two Weeks
Subject: Class location change
We've moved to room 101
Subject: Greeting
Welcome MCCD
Subject: A new quiz has been posted
To begin taking the quiz titled NYCTA click here.
Please answer these questions carefully.
804
806
808
700
702


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
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Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Please check your announcements on a daily basis.
Thanks, Stacey
Welcome to your new course
You can navigate your course by using the map below.
Course Contents
(click on any book to expand)
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
WELCOME TO MUSIC 1011
Use the buttons provided on the left side of your screen to navigate the CourseSite. Begin by clicking the COURSE INFORMATION button to view important information before beginning the course.
Today
Last 2 Weeks
Last Month
All
804
806
700
802

FIG. 8

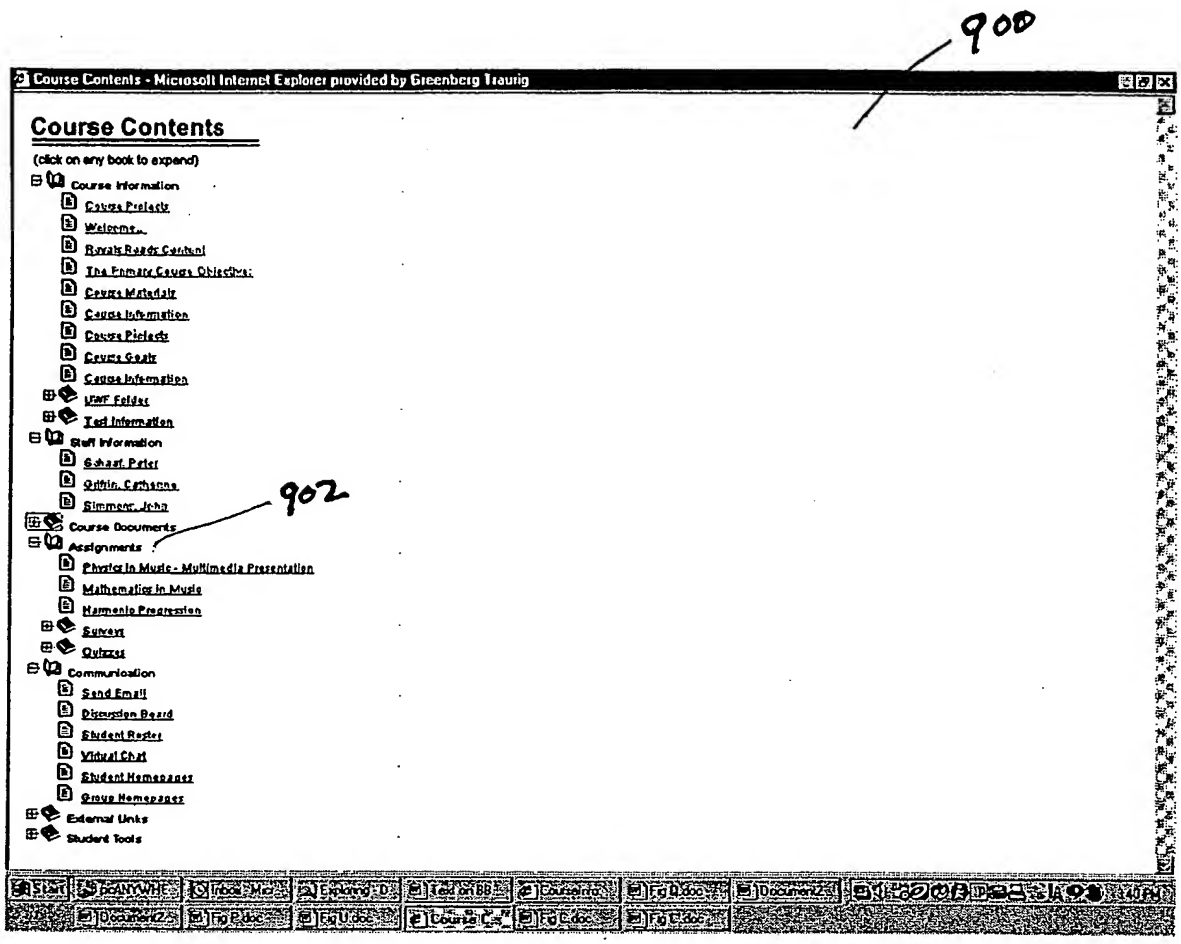

900
Course Contents - Microsoft Internet Explorer provided by Greenberg Traurig
Course Contents
(click on any book to expand)
Course Information
Course Prelude
Welcome
Rovals Reads Content
The Primary Course Objectives
Course Materials
Course Information
Course Prelude
Course Goals
Course Information
HWF Folder
Test Information
Staff Information
Schaaf, Peter
Griffin, Catherine
Simmons, John
902
Course Documents
Assignments
Physics in Music - Multimedia Presentation
Mathematics in Music
Harmonic Progression
Survey
Quizzes
Communication
Send Email
Discussion Board
Student Roster
Virtual Chat
Student Homepages
Group Homepages
External Links
Student Tools

FIG. 9

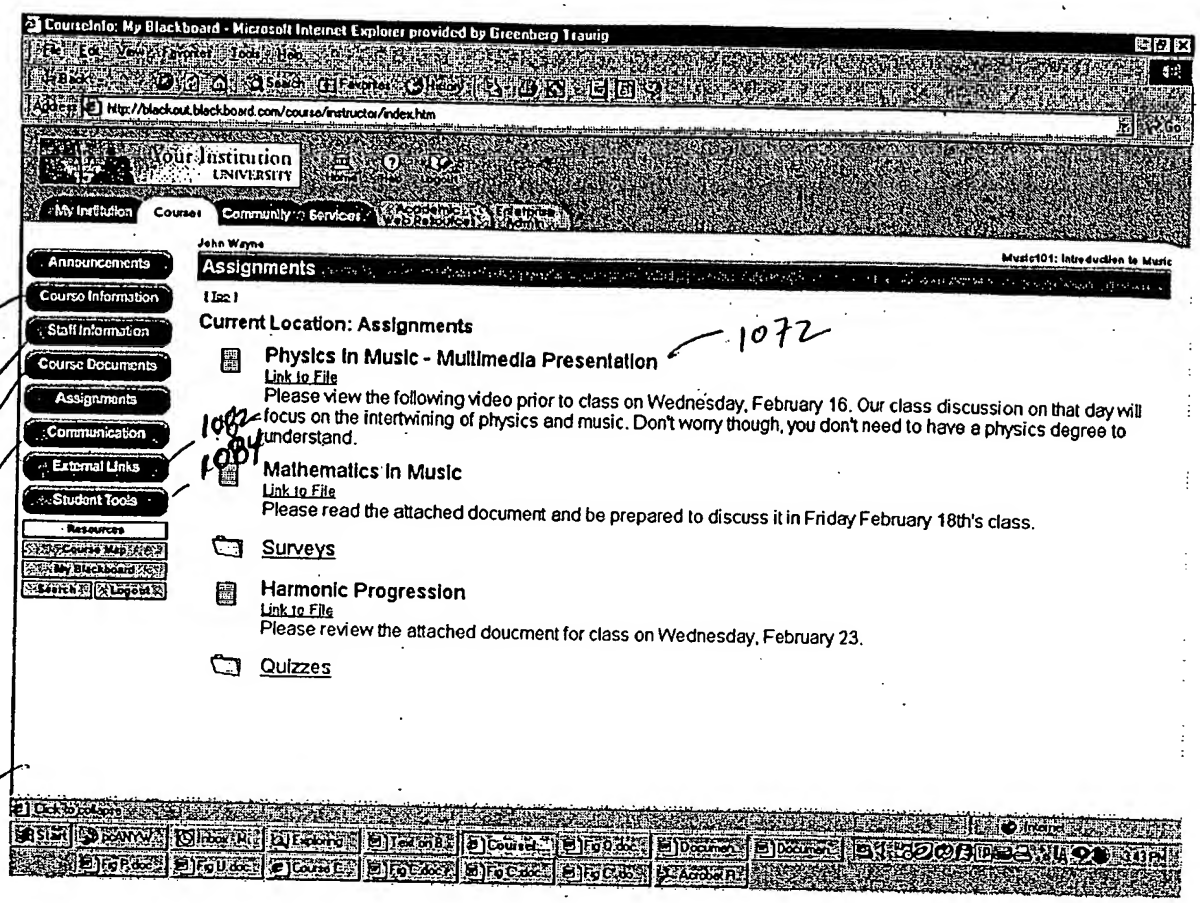
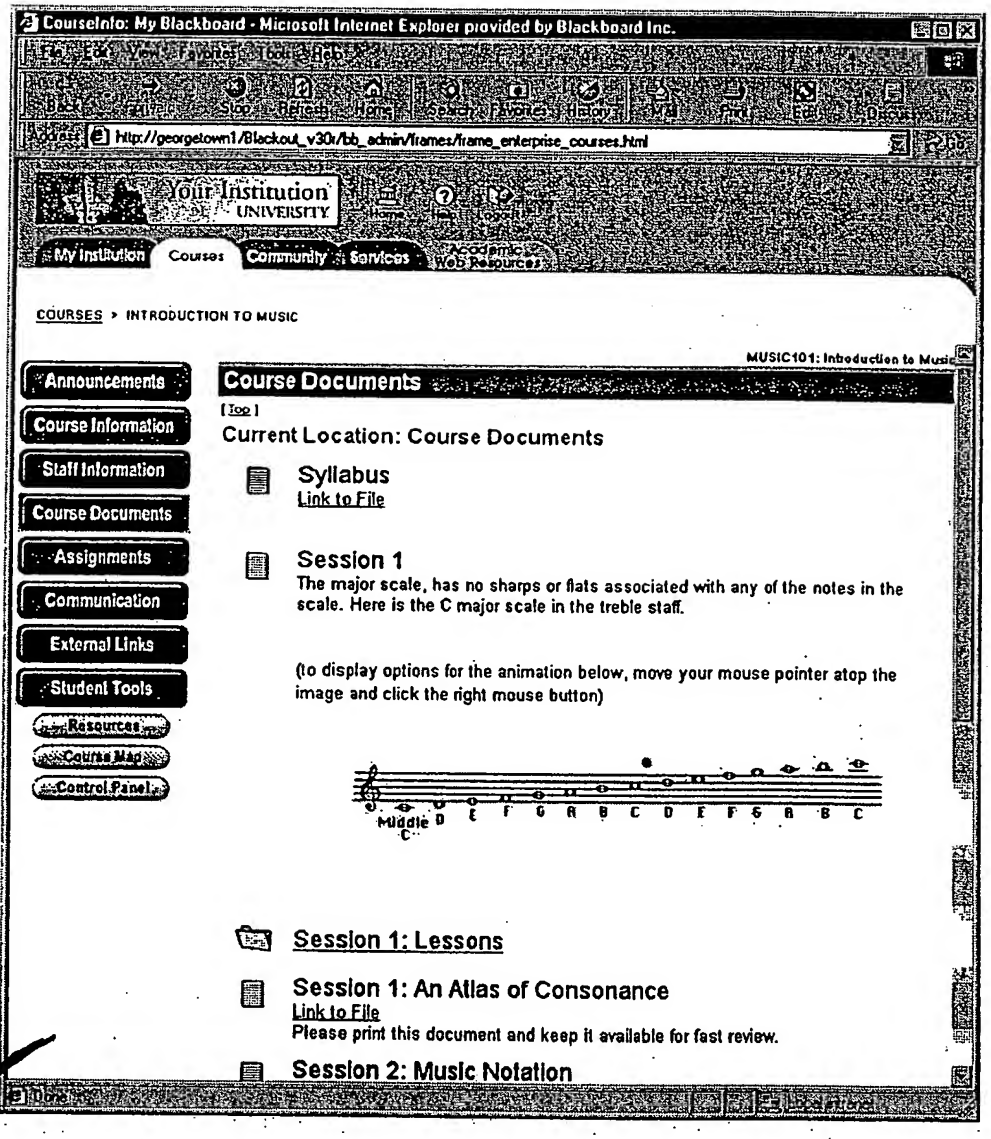

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
Address http://blackout.blackboard.com/course/instructor/index.htm
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
John Wayne
Music101: Introduction to Music
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Resources
Course Map
My Blackboard
Search
Logout
Assignments
Current Location: Assignments
Physics in Music - Multimedia Presentation
Link to File
Please view the following video prior to class on Wednesday, February 16. Our class discussion on that day will focus on the intertwining of physics and music. Don't worry though, you don't need to have a physics degree to understand.
Mathematics in Music
Link to File
Please read the attached document and be prepared to discuss it in Friday February 18th's class.
Surveys
Harmonic Progression
Link to File
Please review the attached doucment for class on Wednesday, February 23.
Quizzes
1074
1076
1078
1080
1070
1072
1082
1084

FIG. 10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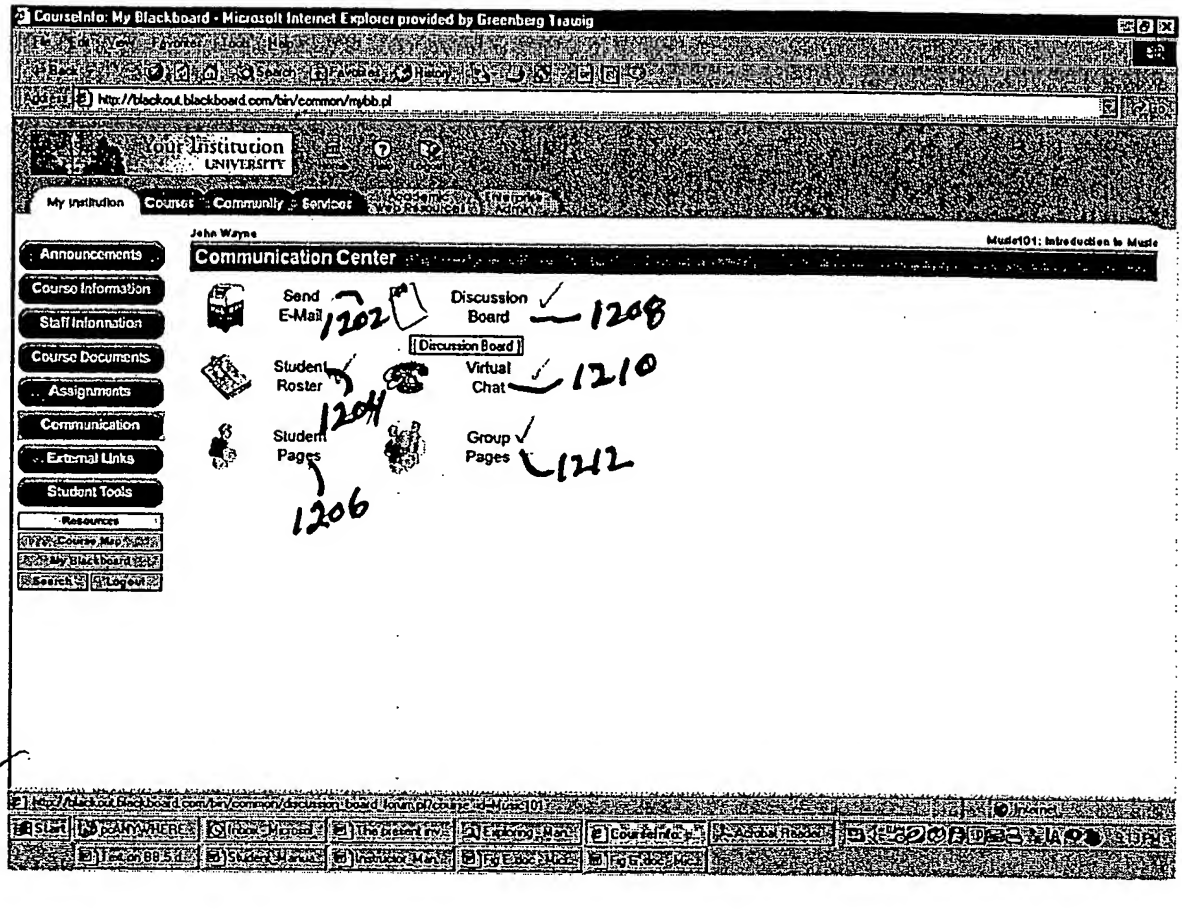
Courses
Community
Services
Academic Web Resources
COURSES > INTRODUCTION TO MUSIC
MUSIC101: Introduction to Music
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Resources
Course Map
Control Panel
Course Documents
[Top]
Current Location: Course Documents
Syllabus
Link to File
Session 1
The major scale, has no sharps or flats associated with any of the notes in the scale. Here is the C major scale in the treble staff.
(to display options for the animation below, move your mouse pointer atop the image and click the right mouse button)
Middle C
D E F G A B C D E F G A B C
Session 1: Lessons
Session 1: An Atlas of Consonance
Link to File
Please print this document and keep it available for fast review.
Session 2: Music Notation

1100

FIG-11


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/bin/common/mybb.pl
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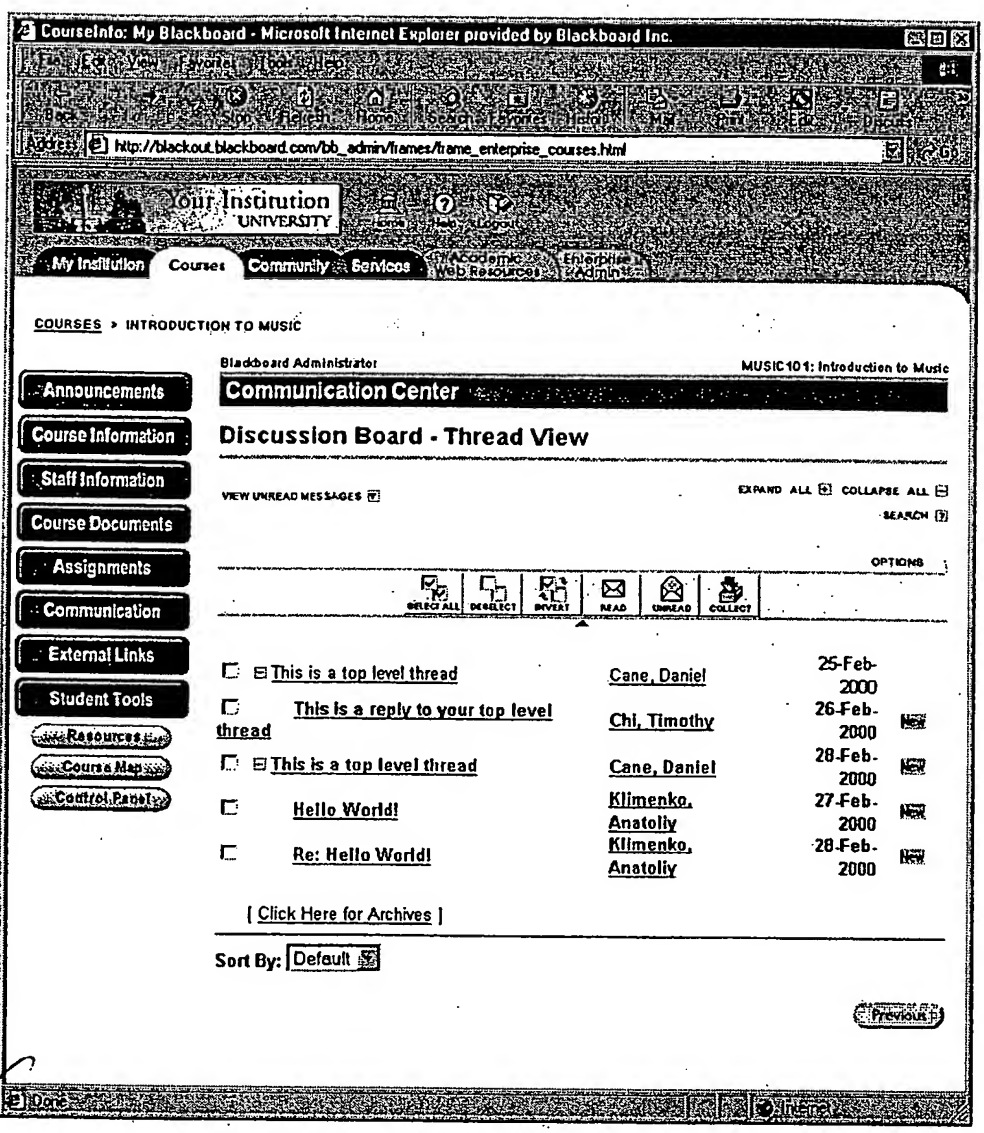
My Institution
Courses
Community
Services
John Wayne
Music101: Introduction to Music
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Resources
Communication Center
Send E-Mail
1202
Discussion Board
1208
Discussion Board
Student Roster
1204
Virtual Chat
1210
Student Pages
1206
Group Pages
1212
1200

FIG. 12


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://blackout.blackboard.com/bb_admin/frames/frame_enterprise_courses.html
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
COURSES > INTRODUCTION TO MUSIC
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
External Links
Student Tools
Resources
Course Map
Control Panel
Blackboard Administrator
MUSIC101: Introduction to Music
Communication Center
Discussion Board - Thread View
VIEW UNREAD MESSAGES
EXPAND ALL
COLLAPSE ALL
SEARCH
OPTIONS
SELECT ALL
DESELECT
DIVERT
READ
UNREAD
COLLECT
This is a top level thread
Cane, Daniel
25-Feb-2000
This is a reply to your top level thread
Chi, Timothy
26-Feb-2000
New
This is a top level thread
Cane, Daniel
28-Feb-2000
New
Hello World!
Klimenko, Anatoliy
27-Feb-2000
New
Re: Hello World!
Klimenko, Anatoliy
28-Feb-2000
New
[ Click Here for Archives ]
Sort By: Default
Previous
Done
Internet

1300

FIG. 13

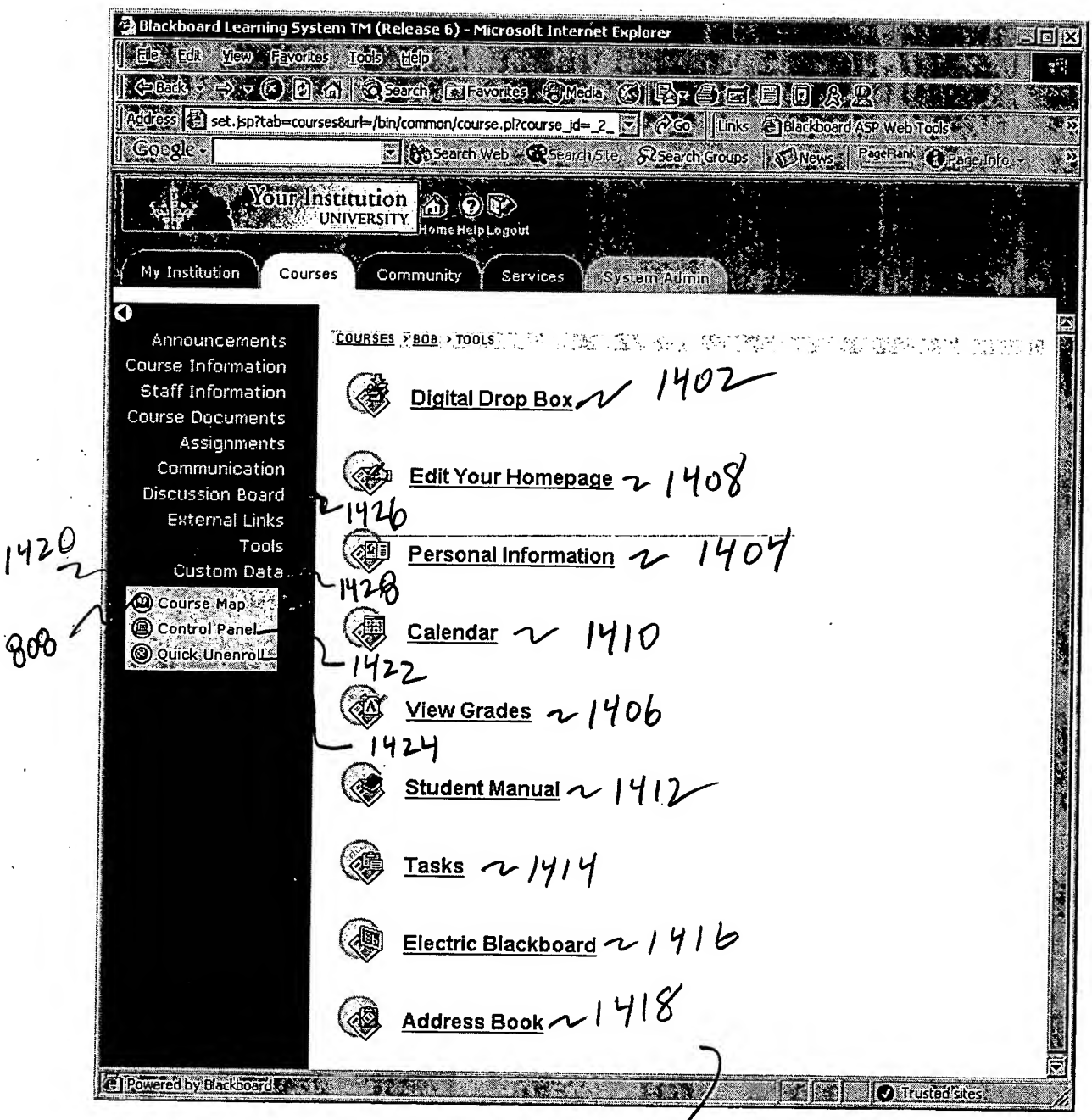

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address set.jsp?tab=courses&url=/bin/common/course.pl?course_id=_2_
Links Blackboard ASP Web Tools
Google Search Web Search Site Search Groups News PageRank Page Info
Your Institution UNIVERSITY
Home Help Logout
My Institution Courses Community Services System Admin
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
Discussion Board
External Links
Tools
Custom Data
Course Map
Control Panel
Quick Unenroll
COURSES > BOB > TOOLS
Digital Drop Box
Edit Your Homepage
Personal Information
Calendar
View Grades
Student Manual
Tasks
Electric Blackboard
Address Book
Powered by Blackboard
Trusted sites
1420
808
1426
1428
1422
1424
1402
1408
1404
1410
1406
1412
1414
1416
1418
1400

Figure 14.

John Wayne

Music101: Introduction to Music

## Student Tools

### Student DropBox

Use your student drop box to submit files to your instructor. Also, your instructor can return your files to you with comments attached.

## Current Files in your DropBox

1508

**Note:** If you want to save a file, right click on the Link Name and choose *Save Link As*

| File Name | Link Name | File Size | Status |
|---|---|---|---|
| none | none | none | none |

[ Remove Files ]

1510

## Add File to DropBox

Click the *Browse* button to select the file to attach from your computer.
Be sure to specify a linkname for your file.

1502

1504

**File to Upload:** Browse...

**Name of Link to File:**
(Example: *Homework One,Assignment One*)

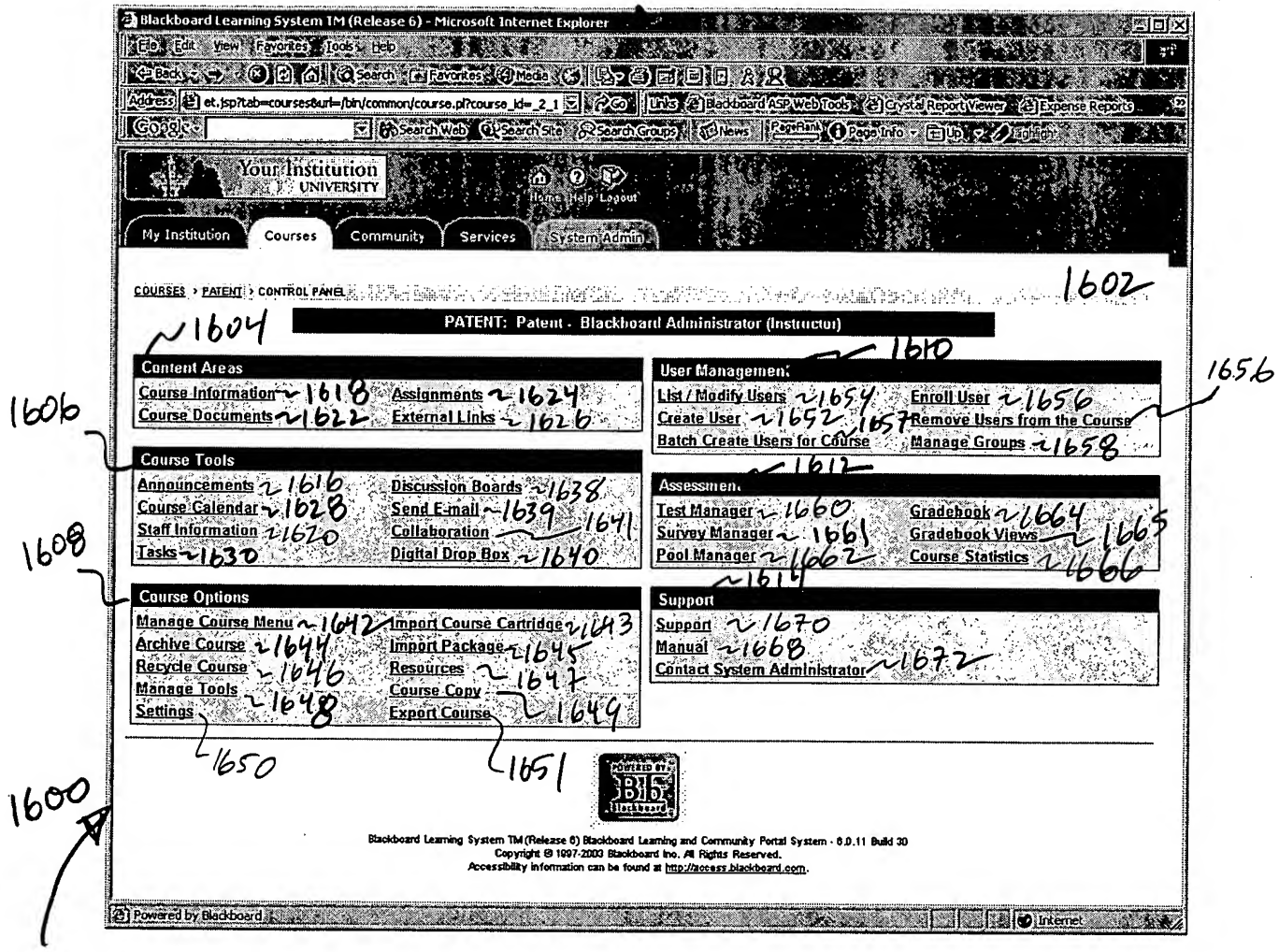
Send File to Instructor

1506

◀ Back

1500

FIG 15


Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
Your Institution UNIVERSITY
Home Help Logout
My Institution
Courses
Community
Services
System Admin
COURSES › PATENT › CONTROL PANEL
PATENT: Patent - Blackboard Administrator (Instructor)
Content Areas
Course Information
Assignments
Course Documents
External Links
Course Tools
Announcements
Discussion Boards
Course Calendar
Send E-mail
Staff Information
Collaboration
Tasks
Digital Drop Box
Course Options
Manage Course Menu
Import Course Cartridge
Archive Course
Import Package
Recycle Course
Resources
Manage Tools
Course Copy
Settings
Export Course
User Management
List / Modify Users
Enroll User
Create User
Remove Users from the Course
Batch Create Users for Course
Manage Groups
Assessment
Test Manager
Gradebook
Survey Manager
Gradebook Views
Pool Manager
Course Statistics
Support
Support
Manual
Contact System Administrator
Blackboard Learning System TM (Release 6) Blackboard Learning and Community Portal System - 6.0.11 Build 30
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Powered by Blackboard
Internet
1600
1602
1604
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1670
1672

Figure 16.

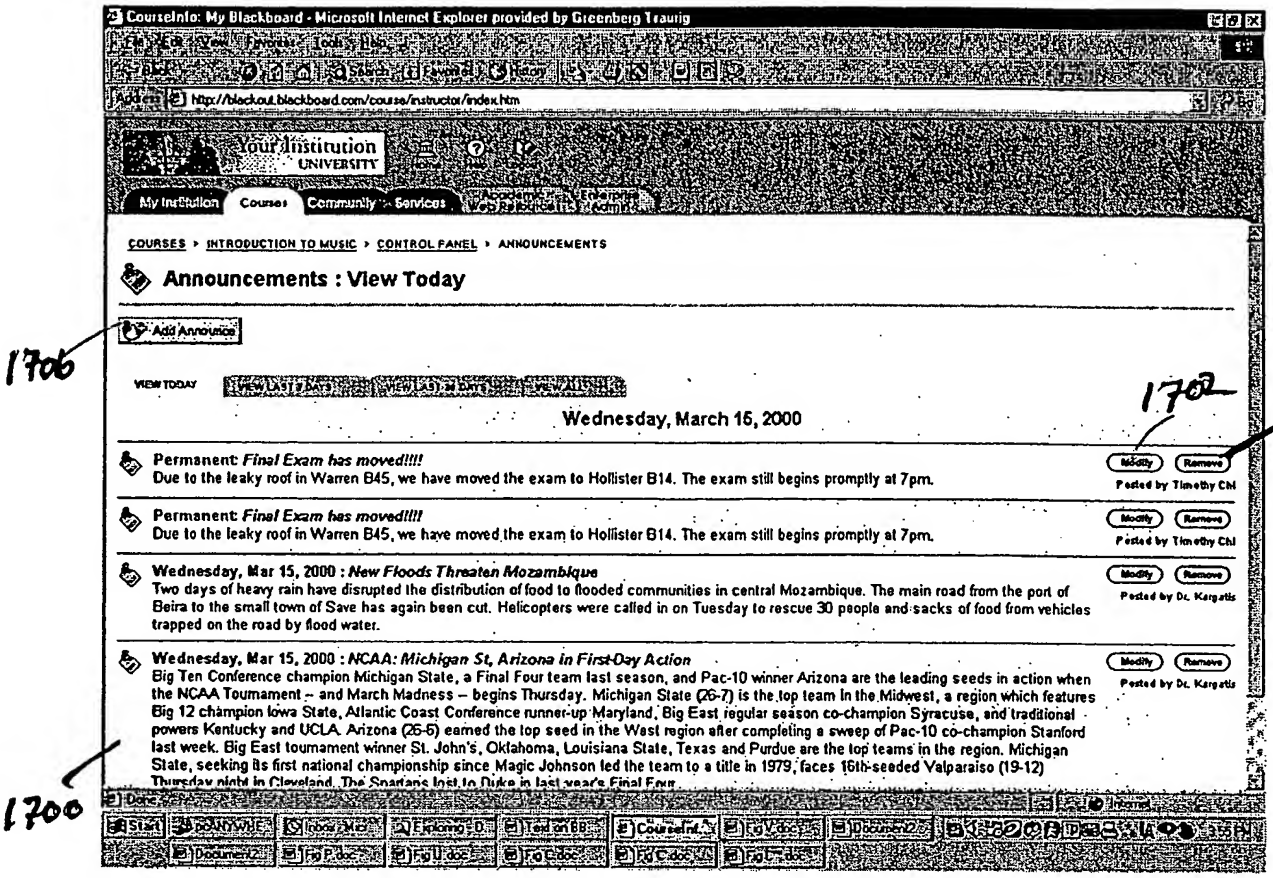

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/course/instructor/index.htm
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
COURSES ▸ INTRODUCTION TO MUSIC ▸ CONTROL PANEL ▸ ANNOUNCEMENTS
Announcements : View Today
Add Announce
VIEW TODAY
Wednesday, March 16, 2000
Permanent: Final Exam has moved!!!!
Due to the leaky roof in Warren B45, we have moved the exam to Hollister B14. The exam still begins promptly at 7pm.
Modify
Remove
Posted by Timothy Chi
Permanent: Final Exam has moved!!!!
Due to the leaky roof in Warren B45, we have moved the exam to Hollister B14. The exam still begins promptly at 7pm.
Modify
Remove
Posted by Timothy Chi
Wednesday, Mar 15, 2000 : New Floods Threaten Mozambique
Two days of heavy rain have disrupted the distribution of food to flooded communities in central Mozambique. The main road from the port of Beira to the small town of Save has again been cut. Helicopters were called in on Tuesday to rescue 30 people and sacks of food from vehicles trapped on the road by flood water.
Modify
Remove
Posted by Dr. Kargatis
Wednesday, Mar 15, 2000 : NCAA: Michigan St, Arizona in First-Day Action
Big Ten Conference champion Michigan State, a Final Four team last season, and Pac-10 winner Arizona are the leading seeds in action when the NCAA Tournament -- and March Madness -- begins Thursday. Michigan State (26-7) is the top team in the Midwest, a region which features Big 12 champion Iowa State, Atlantic Coast Conference runner-up Maryland, Big East regular season co-champion Syracuse, and traditional powers Kentucky and UCLA. Arizona (26-6) earned the top seed in the West region after completing a sweep of Pac-10 co-champion Stanford last week. Big East tournament winner St. John's, Oklahoma, Louisiana State, Texas and Purdue are the top teams in the region. Michigan State, seeking its first national championship since Magic Johnson led the team to a title in 1979, faces 16th-seeded Valparaiso (19-12) Thursday night in Cleveland. The Spartans lost to Duke in last year's Final Four.
Modify
Remove
Posted by Dr. Kargatis
1706
1702
1704
1700

FIG. 17

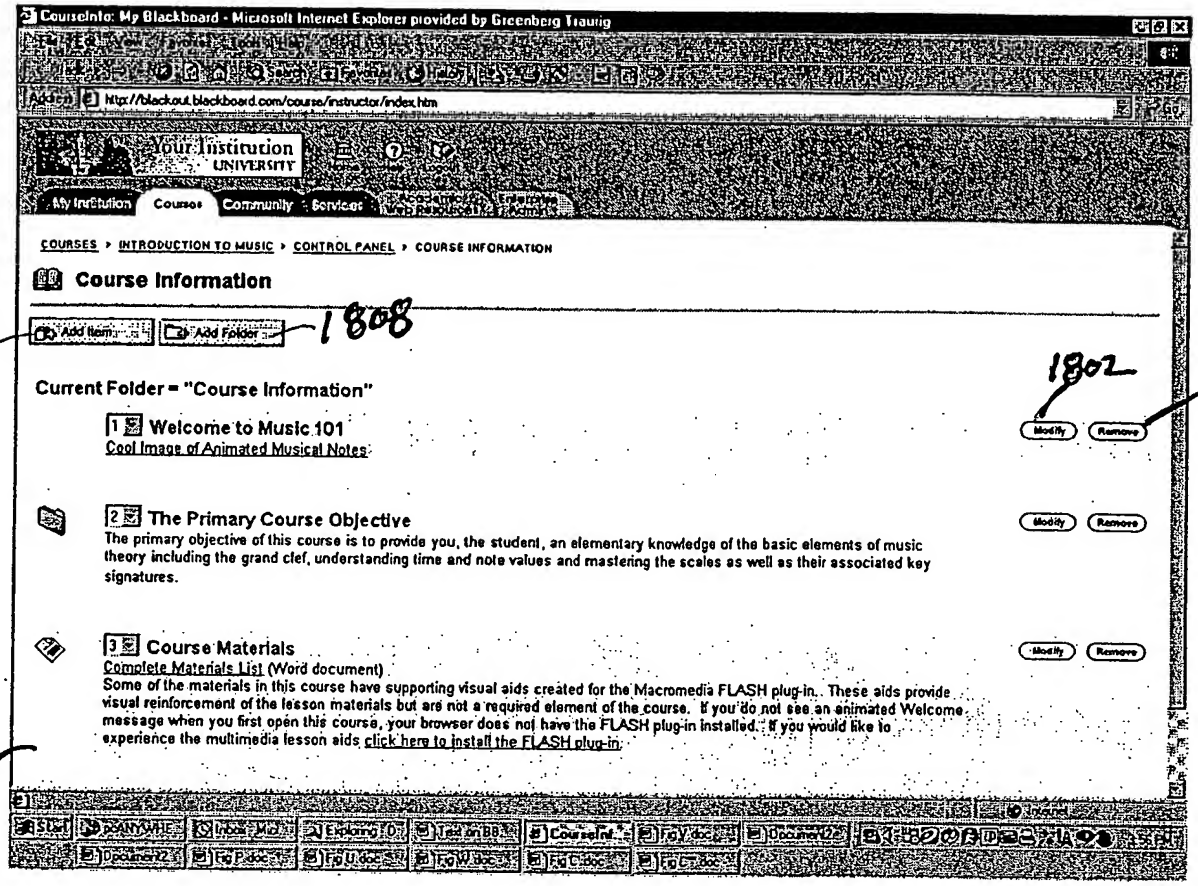

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
Address http://blackout.blackboard.com/course/instructor/index.htm
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
COURSES ▸ INTRODUCTION TO MUSIC ▸ CONTROL PANEL ▸ COURSE INFORMATION
Course Information
Add Item
Add Folder
1808
1806
1802
1804
Current Folder = "Course Information"
1 Welcome to Music 101
Cool Image of Animated Musical Notes
Modify
Remove
2 The Primary Course Objective
The primary objective of this course is to provide you, the student, an elementary knowledge of the basic elements of music theory including the grand clef, understanding time and note values and mastering the scales as well as their associated key signatures.
3 Course Materials
Complete Materials List (Word document)
Some of the materials in this course have supporting visual aids created for the Macromedia FLASH plug-in. These aids provide visual reinforcement of the lesson materials but are not a required element of the course. If you do not see an animated Welcome message when you first open this course, your browser does not have the FLASH plug-in installed. If you would like to experience the multimedia lesson aids click here to install the FLASH plug-in.
1800

FIG. 18

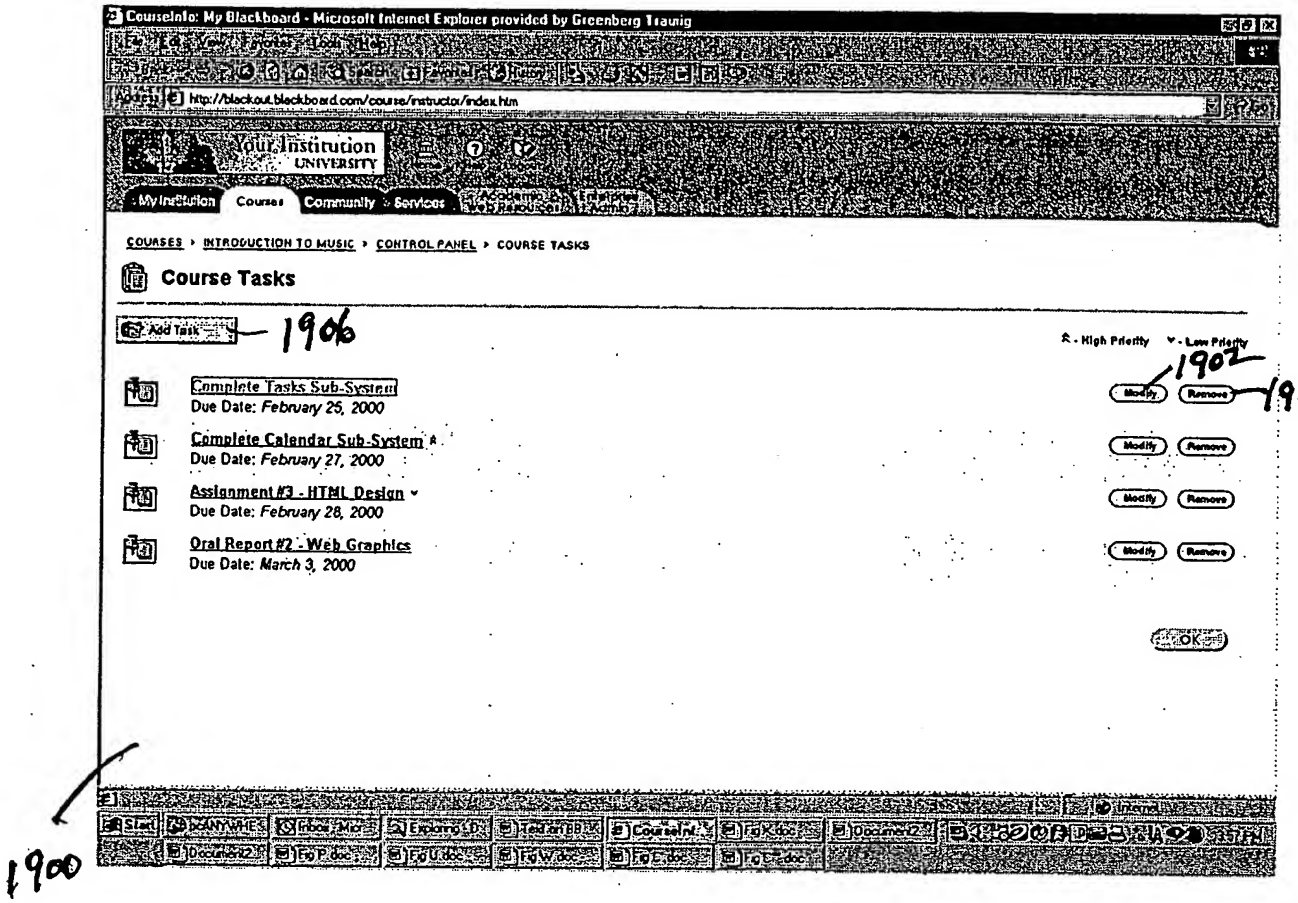

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/course/instructor/index.htm
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
COURSES ▸ INTRODUCTION TO MUSIC ▸ CONTROL PANEL ▸ COURSE TASKS
Course Tasks
Add Task
1906
High Priority
Low Priority
1902
1904
Complete Tasks Sub-System
Due Date: February 25, 2000
Complete Calendar Sub-System
Due Date: February 27, 2000
Assignment #3 - HTML Design
Due Date: February 28, 2000
Oral Report #2 - Web Graphics
Due Date: March 3, 2000
Modify
Remove
OK
1900

FIG 19

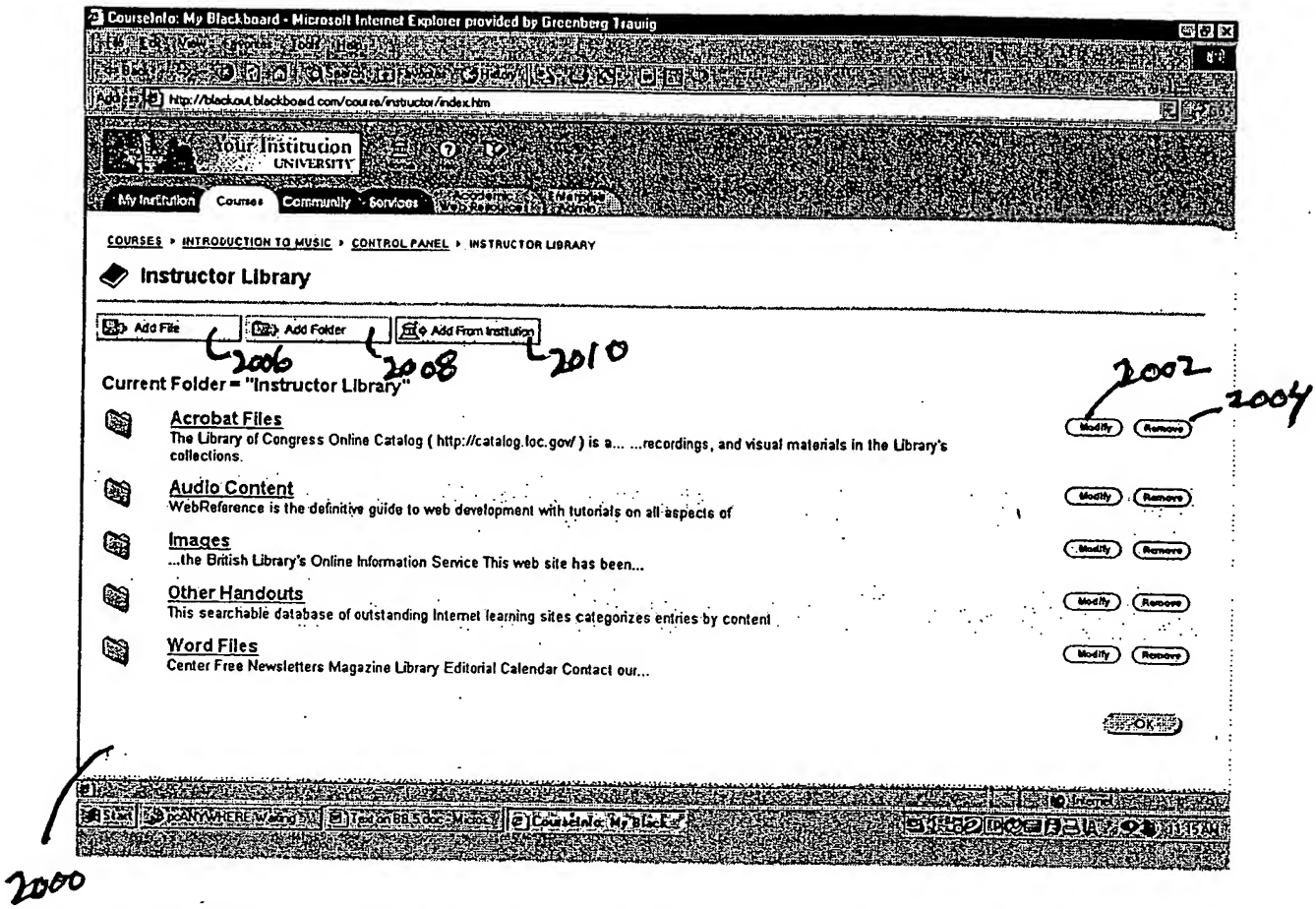

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/course/instructor/index.htm
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
COURSES ▸ INTRODUCTION TO MUSIC ▸ CONTROL PANEL ▸ INSTRUCTOR LIBRARY
Instructor Library
Add File
Add Folder
Add From Institution
2006
2008
2010
Current Folder = "Instructor Library"
2002
2004
Acrobat Files
The Library of Congress Online Catalog ( http://catalog.loc.gov/ ) is a... ...recordings, and visual materials in the Library's collections.
Modify
Remove
Audio Content
WebReference is the definitive guide to web development with tutorials on all aspects of
Images
...the British Library's Online Information Service This web site has been...
Other Handouts
This searchable database of outstanding Internet learning sites categorizes entries by content
Word Files
Center Free Newsletters Magazine Library Editorial Calendar Contact our...
OK
2000

FIG. 20

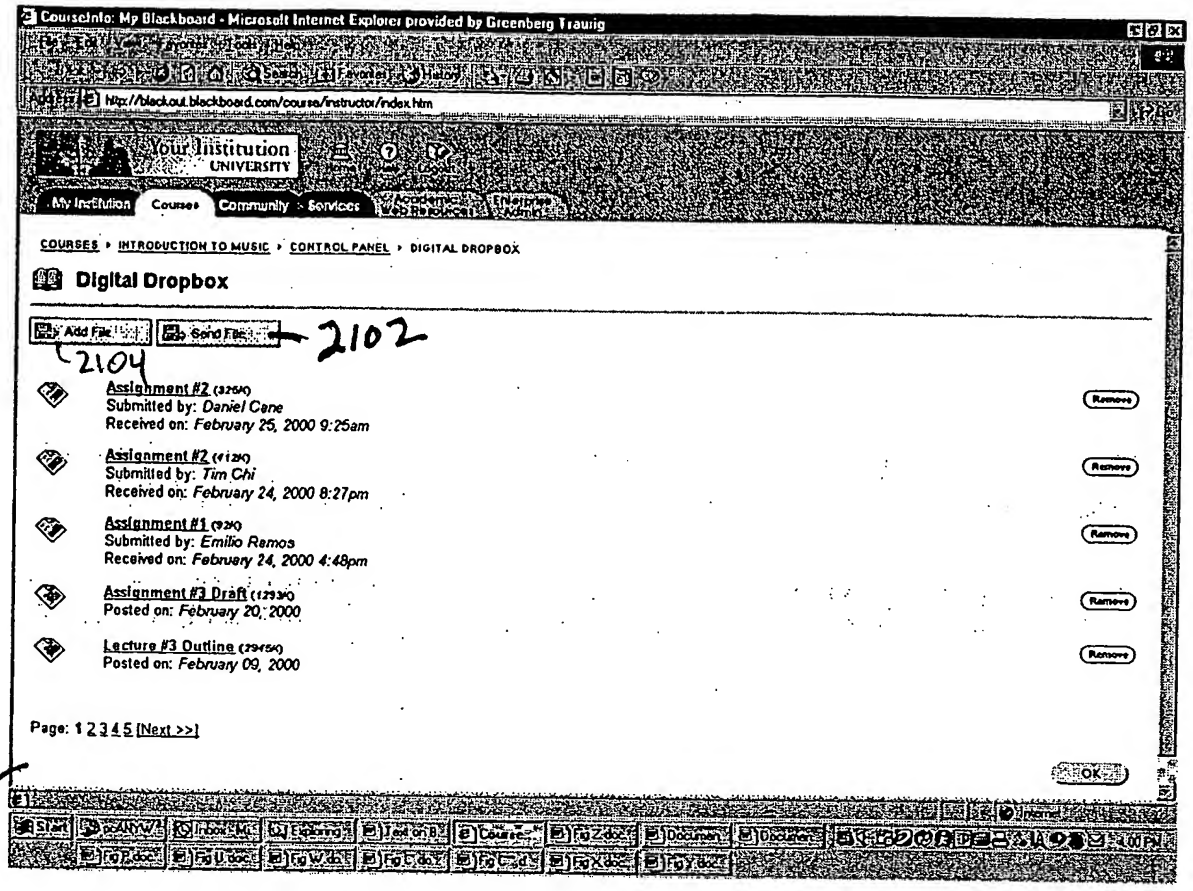

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/course/instructor/index.htm
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
COURSES ▸ INTRODUCTION TO MUSIC ▸ CONTROL PANEL ▸ DIGITAL DROPBOX
Digital Dropbox
Add File
Send File
2102
2104
Assignment #2 (3250)
Submitted by: Daniel Cane
Received on: February 25, 2000 9:25am
Remove
Assignment #2 (4120)
Submitted by: Tim Chi
Received on: February 24, 2000 8:27pm
Remove
Assignment #1 (920)
Submitted by: Emilio Ramos
Received on: February 24, 2000 4:48pm
Remove
Assignment #3 Draft (12930)
Posted on: February 20, 2000
Remove
Lecture #3 Outline (29450)
Posted on: February 09, 2000
Remove
Page: 1 2 3 4 5 [Next >>]
OK
2100

FIG. 21

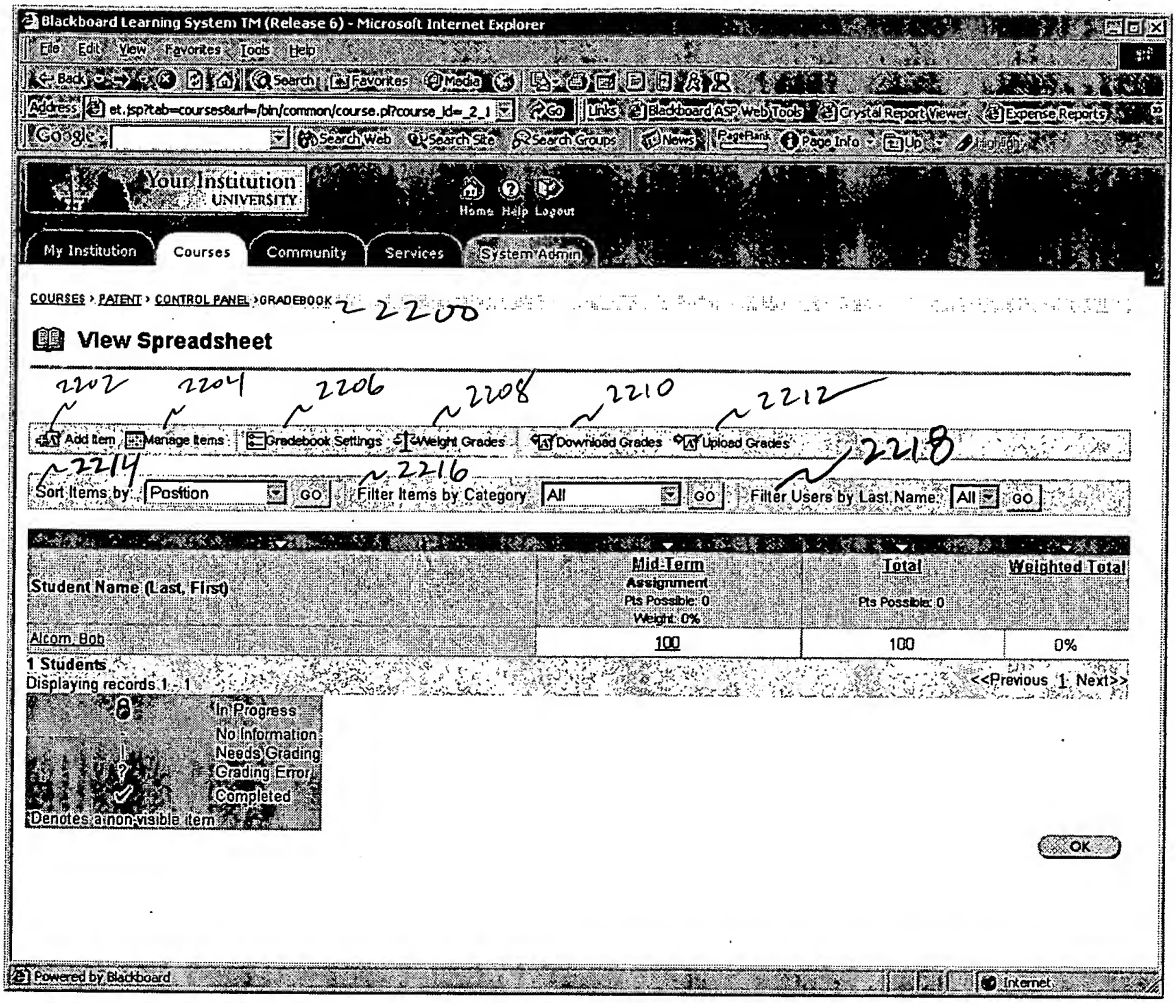

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
Your Institution UNIVERSITY
Home Help Logout
My Institution
Courses
Community
Services
System Admin
COURSES › PATENT › CONTROL PANEL › GRADEBOOK
2200
View Spreadsheet
2202
2204
2206
2208
2210
2212
Add Item
Manage Items
Gradebook Settings
Weight Grades
Download Grades
Upload Grades
2218
2214
Sort Items by
Position
GO
2216
Filter Items by Category
All
GO
Filter Users by Last Name
All
GO
Student Name (Last, First)
Mid-Term
Assignment
Pts Possible: 0
Weight: 0%
Total
Pts Possible: 0
Weighted Total
Alcorn, Bob
100
100
0%
1 Students
Displaying records 1 - 1
<<Previous 1 Next>>
In Progress
No Information
Needs Grading
Grading Error
Completed
Denotes a non-visible item
OK
Powered by Blackboard
Internet

Figure 22.

# Course Statistics

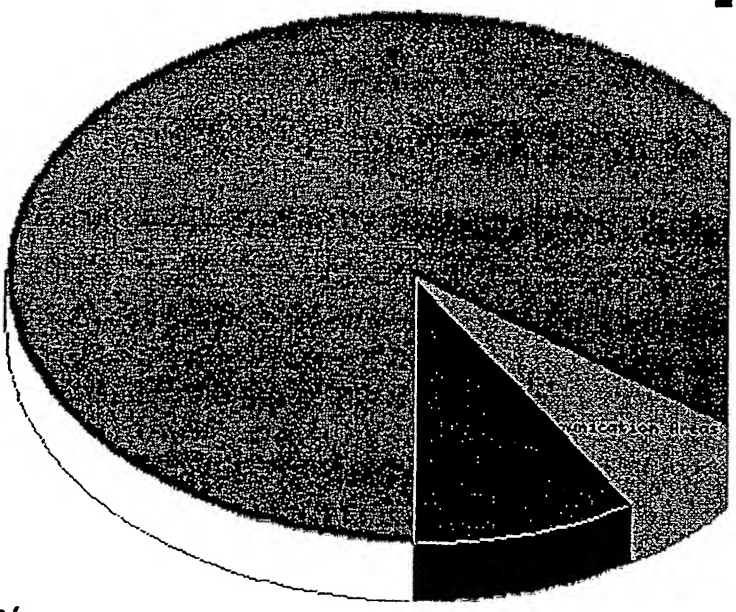
2300

*Statistics Generated on Thursday, February 24, 2000 11:26:28 AM*
***Note:You may have to reload/refresh this page for the images to be correct.***

Total Number of Accesses per Area —2302
Number of Accesses over Time —2304
User Accesses per Hour of the Day —2306
User Accesses per Day of the Week —2308
Total Accesses by User —2310

## Total Number of Accesses per Area — 2302

| Area Name | Hits | Percent |
|---|---|---|
| Content Areas | 139 | 83.2 % |
| Communication Areas | 10 | 5.98 % |
| Group Areas | | 0 % |
| Student Areas | 15 | 8.98 % |
| Total | 167 | 100 % |



## Number of Accesses over Time —2304

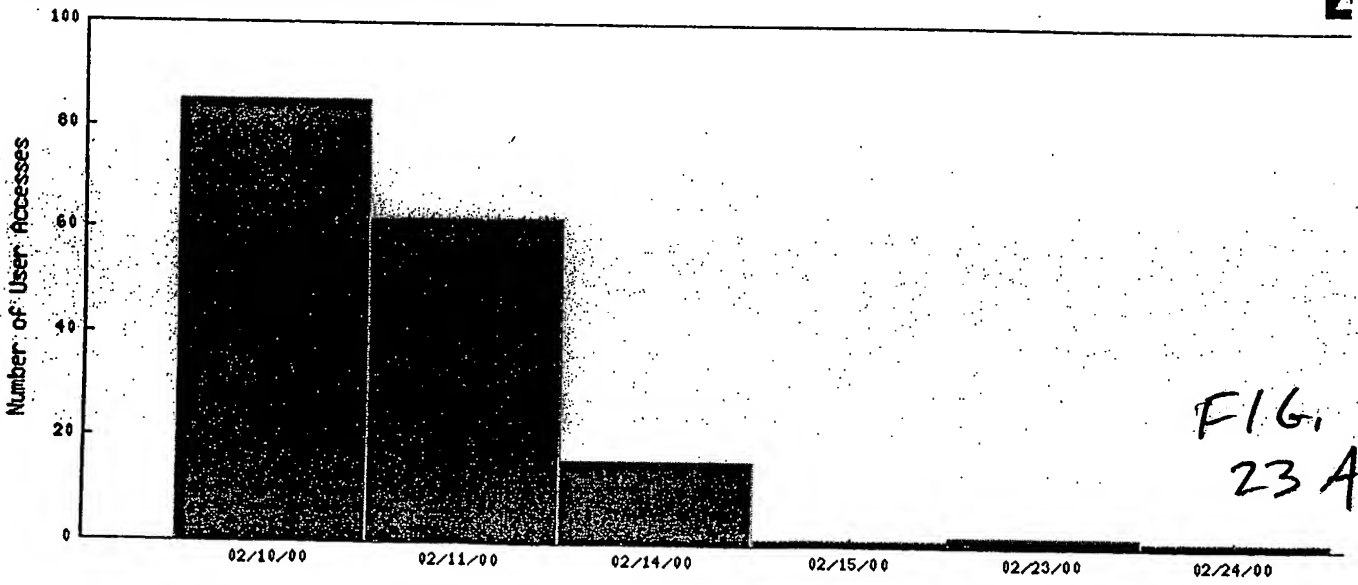
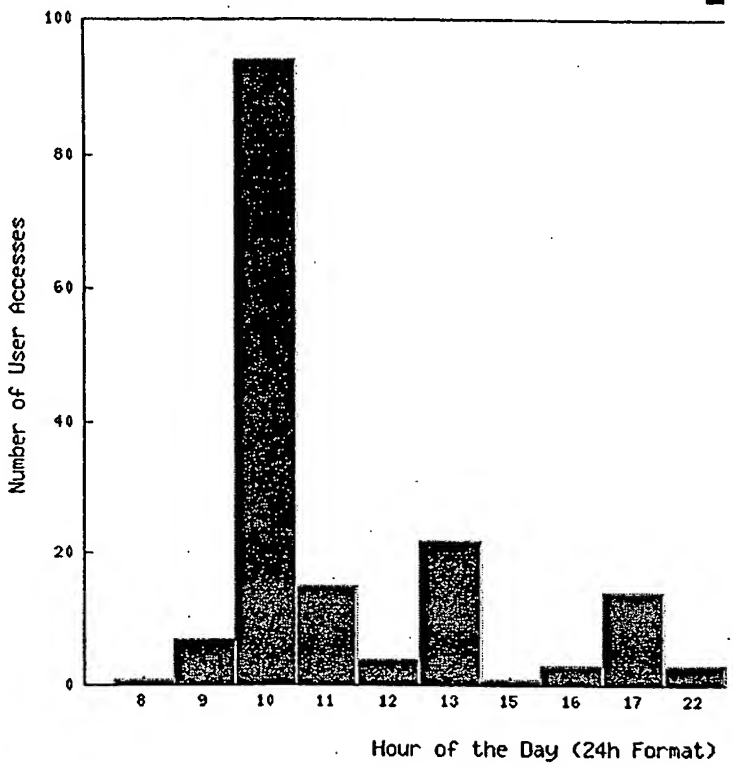



FIG. 23A

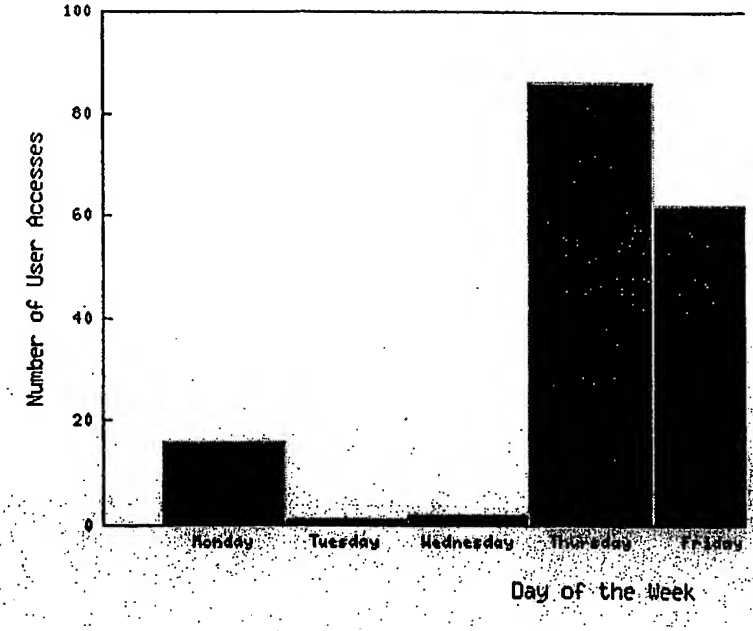
## User Accesses by Hour of the Day — 2306

| Hour of The Day | Hits | Percent |
|---|---|---|
| 8 | 1 | 0.59 % |
| 9 | 7 | 4.19 % |
| 10 | 94 | 56.2 % |
| 11 | 15 | 8.98 % |
| 12 | 4 | 2.39 % |
| 13 | 22 | 13.1 % |
| 15 | 1 | 0.59 % |
| 16 | 3 | 1.79 % |
| 17 | 14 | 8.38 % |
| 22 | 3 | 1.79 % |
| 23 | 3 | 1.79 % |
| Total | 167 | 100 % |



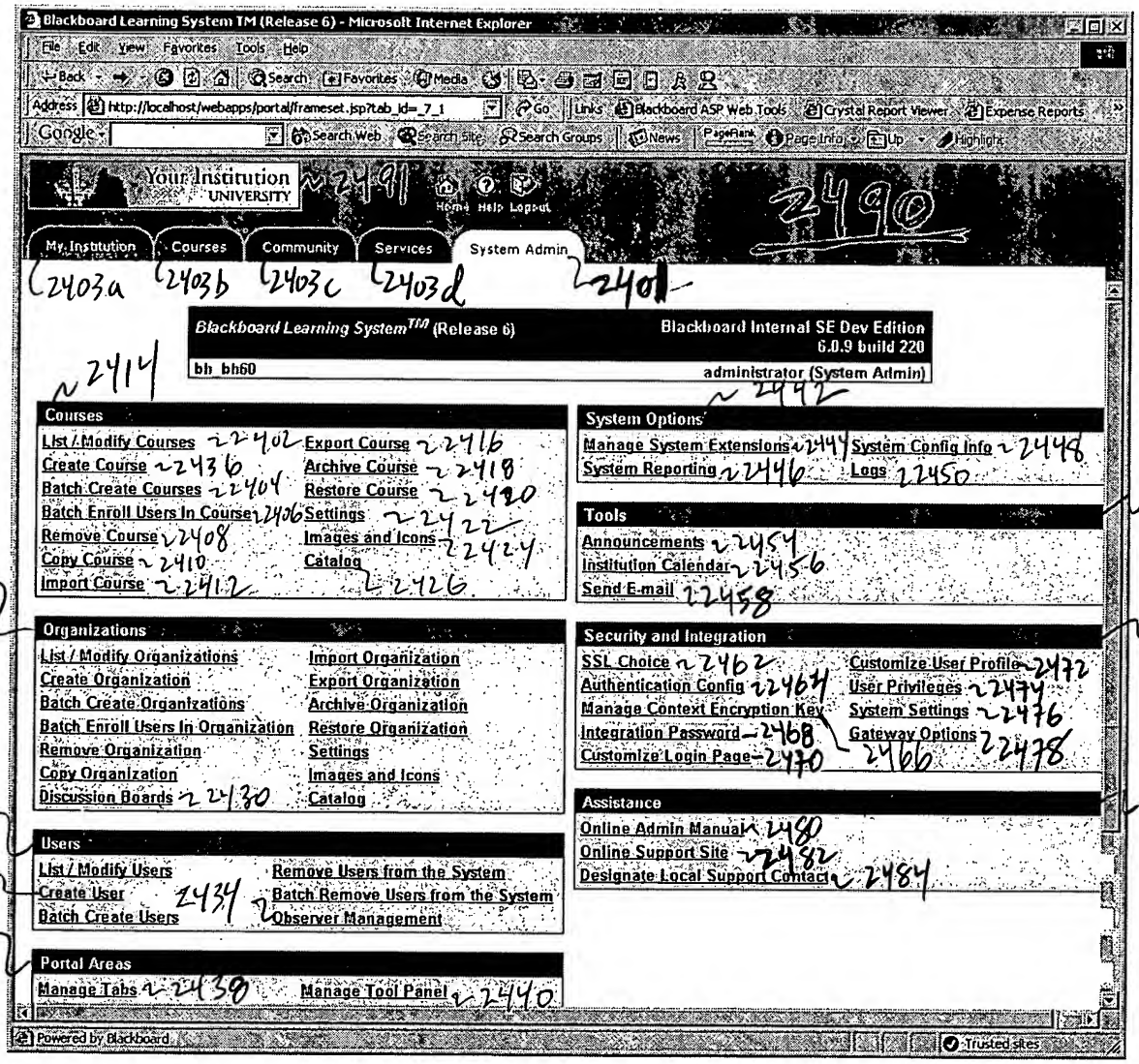

## User Accesses by Day of the Week — 2308

| Day of The Week | Hits | Percent |
|---|---|---|
| Monday | 16 | 9.58 % |
| Tuesday | 1 | 0.59 % |
| Wednesday | 2 | 1.19 % |
| Thursday | 86 | 51.4 % |
| Friday | 62 | 37.1 % |
| Total | 167 | 100 % |




2300

FIG. 23B


Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://localhost/webapps/portal/frameset.jsp?tab_id=_7_1
Your Institution UNIVERSITY
Home Help Logout
My Institution
Courses
Community
Services
System Admin
Blackboard Learning System™ (Release 6)
Blackboard Internal SE Dev Edition 6.0.9 build 220
bh_bh60
administrator (System Admin)
Courses
List / Modify Courses
Create Course
Batch Create Courses
Batch Enroll Users In Course
Remove Course
Copy Course
Import Course
Export Course
Archive Course
Restore Course
Settings
Images and Icons
Catalog
Organizations
List / Modify Organizations
Create Organization
Batch Create Organizations
Batch Enroll Users In Organization
Remove Organization
Copy Organization
Discussion Boards
Import Organization
Export Organization
Archive Organization
Restore Organization
Settings
Images and Icons
Catalog
Users
List / Modify Users
Create User
Batch Create Users
Remove Users from the System
Batch Remove Users from the System
Observer Management
Portal Areas
Manage Tabs
Manage Tool Panel
System Options
Manage System Extensions
System Reporting
System Config Info
Logs
Tools
Announcements
Institution Calendar
Send E-mail
Security and Integration
SSL Choice
Authentication Config
Manage Context Encryption Key
Integration Password
Customize Login Page
Customize User Profile
User Privileges
System Settings
Gateway Options
Assistance
Online Admin Manual
Online Support Site
Designate Local Support Contact
Powered by Blackboard
Trusted sites
2491
2490
2403a
2403b
2403c
2403d
2401
2414
2492
2428
2452
2460
2432
2433
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2479
2402
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2404
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2412
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2470
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2476
2478
2480
2482
2484
2434
2438
2440

FIG. 24

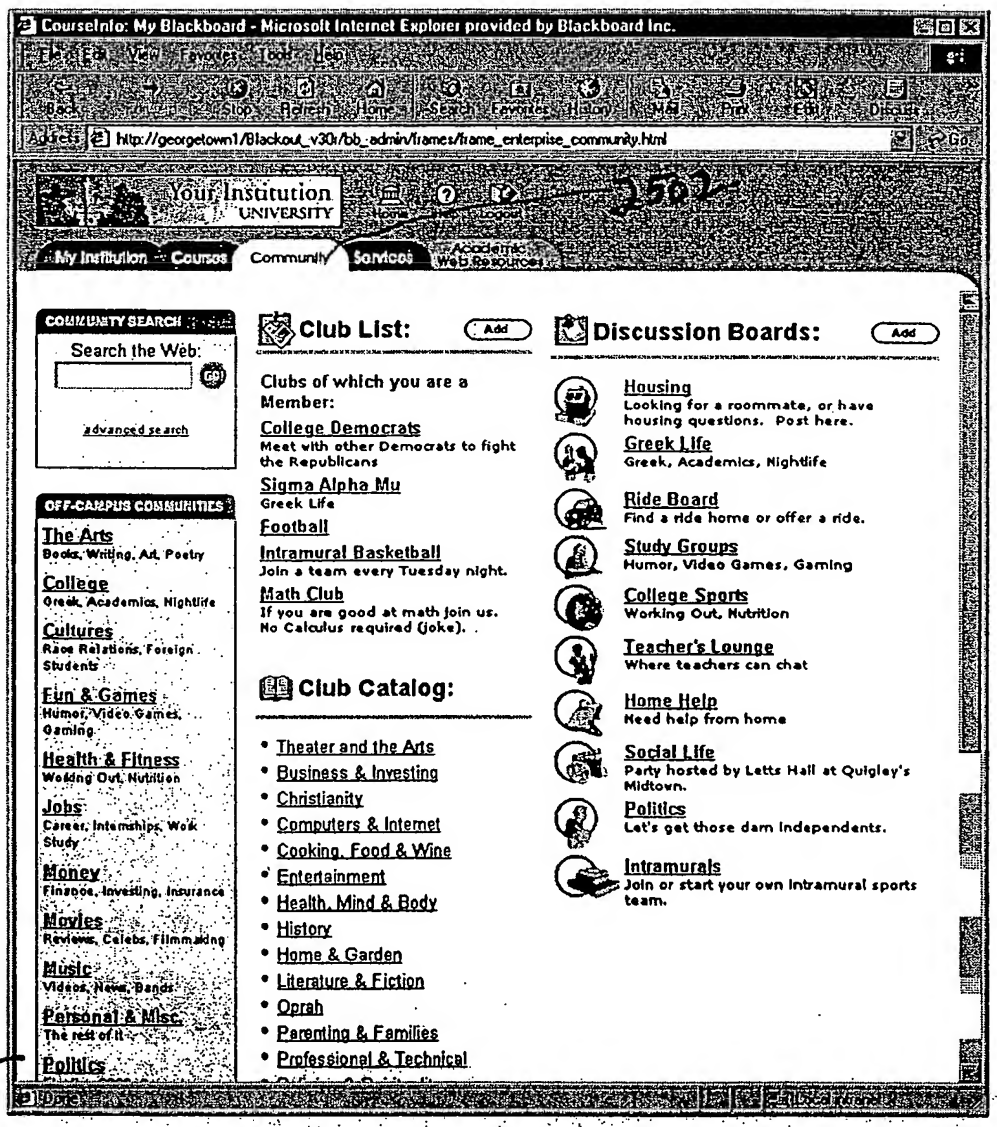

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://georgetown1/Blackout_v30r/bb_admin/frames/frame_enterprise_community.html
Your Institution
UNIVERSITY
2502
My Institution
Courses
Community
Services
Academic Web Resources
COMMUNITY SEARCH
Search the Web:
advanced search
OFF-CAMPUS COMMUNITIES
The Arts
Books, Writing, Art, Poetry
College
Greek, Academics, Nightlife
Cultures
Race Relations, Foreign Students
Fun & Games
Humor, Video Games, Gaming
Health & Fitness
Working Out, Nutrition
Jobs
Career, Internships, Work Study
Money
Finance, Investing, Insurance
Movies
Reviews, Celebs, Filmmaking
Music
Videos, News, Bands
Personal & Misc.
The rest of it
Politics
Club List:
Add
Clubs of which you are a Member:
College Democrats
Meet with other Democrats to fight the Republicans
Sigma Alpha Mu
Greek Life
Football
Intramural Basketball
Join a team every Tuesday night.
Math Club
If you are good at math join us. No Calculus required (joke).
Club Catalog:
Theater and the Arts
Business & Investing
Christianity
Computers & Internet
Cooking, Food & Wine
Entertainment
Health, Mind & Body
History
Home & Garden
Literature & Fiction
Oprah
Parenting & Families
Professional & Technical
Discussion Boards:
Add
Housing
Looking for a roommate, or have housing questions. Post here.
Greek Life
Greek, Academics, Nightlife
Ride Board
Find a ride home or offer a ride.
Study Groups
Humor, Video Games, Gaming
College Sports
Working Out, Nutrition
Teacher's Lounge
Where teachers can chat
Home Help
Need help from home
Social Life
Party hosted by Letts Hall at Quigley's Midtown.
Politics
Let's get those dam Independents.
Intramurals
Join or start your own intramural sports team.
2500

FIG. 25

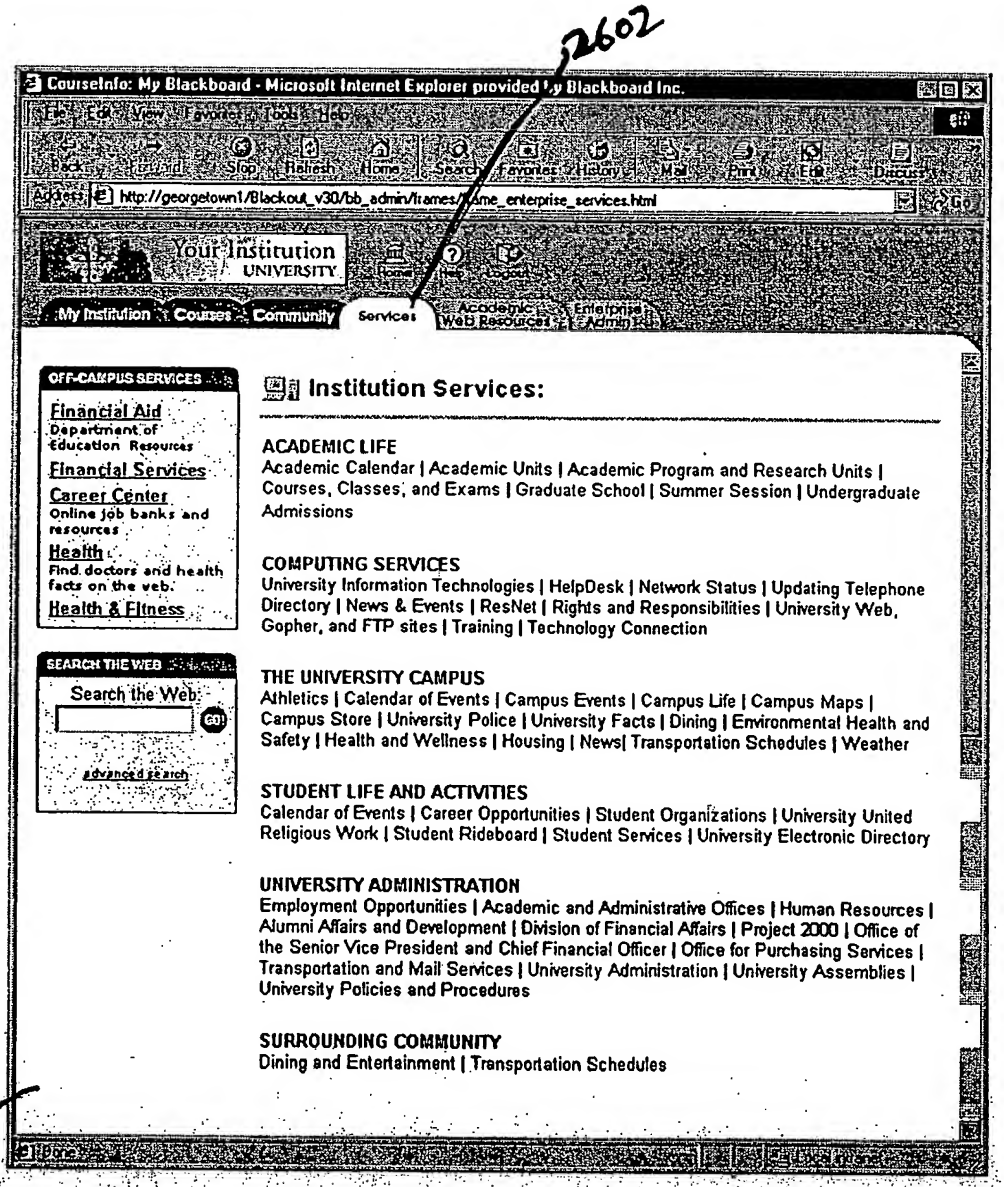
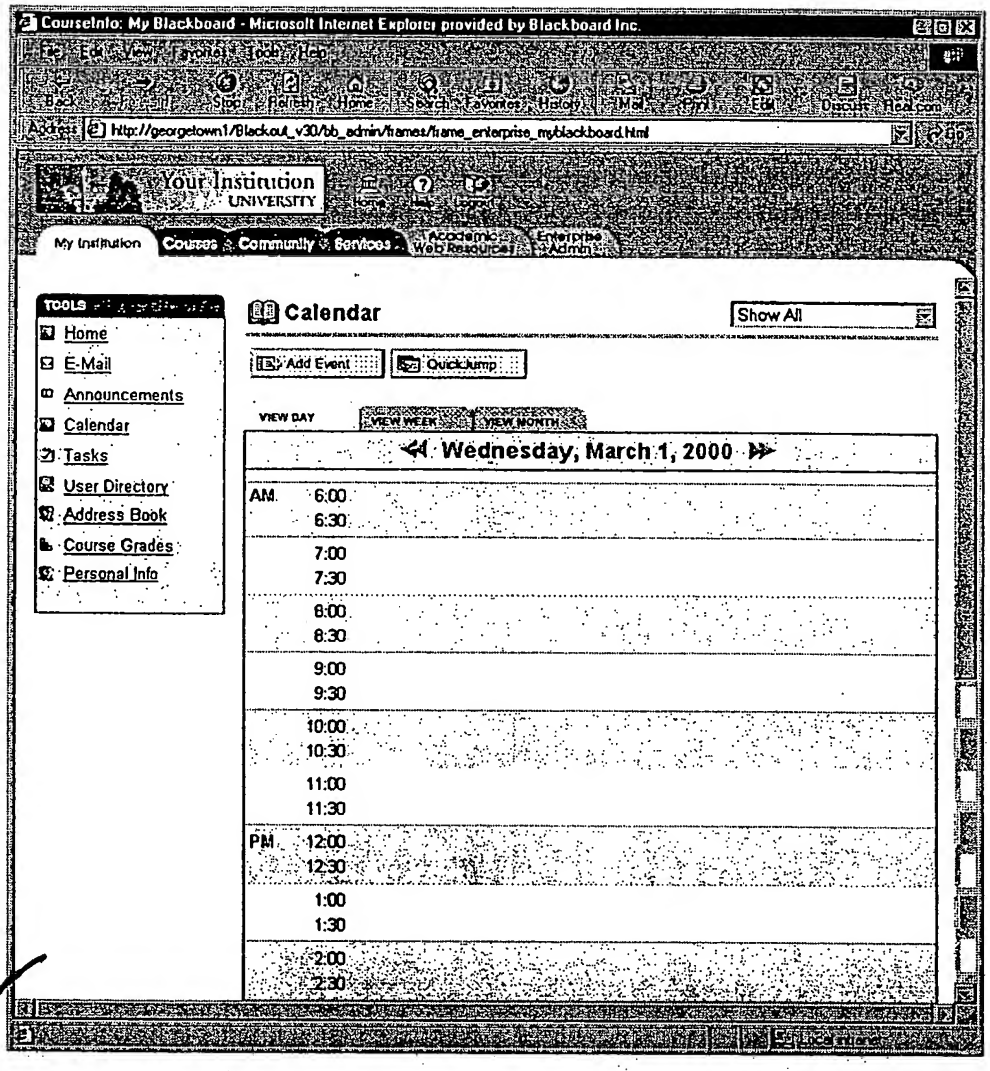

2602
CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://georgetown1/Blackout_v30/bb_admin/frames/frame_enterprise_services.html
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
Enterprise Admin Tab
OFF-CAMPUS SERVICES
Financial Aid
Department of Education Resources
Financial Services
Career Center
Online job banks and resources
Health
Find doctors and health facts on the web.
Health & Fitness
SEARCH THE WEB
Search the Web
GO
advanced search
Institution Services:
ACADEMIC LIFE
Academic Calendar | Academic Units | Academic Program and Research Units | Courses, Classes, and Exams | Graduate School | Summer Session | Undergraduate Admissions
COMPUTING SERVICES
University Information Technologies | HelpDesk | Network Status | Updating Telephone Directory | News & Events | ResNet | Rights and Responsibilities | University Web, Gopher, and FTP sites | Training | Technology Connection
THE UNIVERSITY CAMPUS
Athletics | Calendar of Events | Campus Events | Campus Life | Campus Maps | Campus Store | University Police | University Facts | Dining | Environmental Health and Safety | Health and Wellness | Housing | News| Transportation Schedules | Weather
STUDENT LIFE AND ACTIVITIES
Calendar of Events | Career Opportunities | Student Organizations | University United Religious Work | Student Rideboard | Student Services | University Electronic Directory
UNIVERSITY ADMINISTRATION
Employment Opportunities | Academic and Administrative Offices | Human Resources | Alumni Affairs and Development | Division of Financial Affairs | Project 2000 | Office of the Senior Vice President and Chief Financial Officer | Office for Purchasing Services | Transportation and Mail Services | University Administration | University Assemblies | University Policies and Procedures
SURROUNDING COMMUNITY
Dining and Entertainment | Transportation Schedules
2600

FIG. 26


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
File Edit View Favorites Tools Help
Address http://georgetown1/Blackout_v30/bb_admin/frames/frame_enterprise_myblackboard.html
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
Enterprise Admin
TOOLS
Home
E-Mail
Announcements
Calendar
Tasks
User Directory
Address Book
Course Grades
Personal Info
Calendar
Show All
Add Event
QuickJump
VIEW DAY
VIEW WEEK
VIEW MONTH
Wednesday, March 1, 2000
AM
6:00
6:30
7:00
7:30
8:00
8:30
9:00
9:30
10:00
10:30
11:00
11:30
PM
12:00
12:30
1:00
1:30
2:00
2:30

2700

FIG. 27

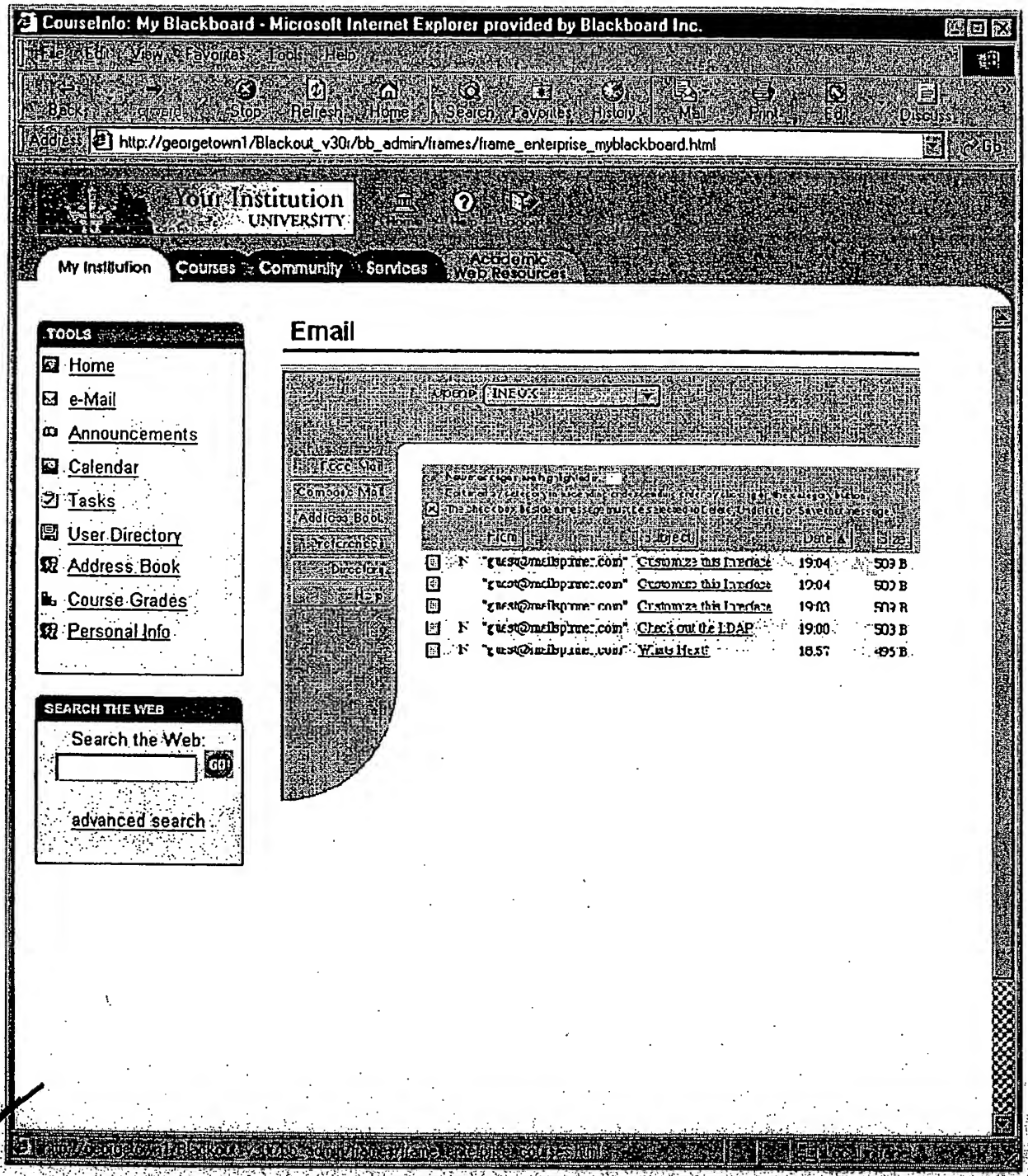
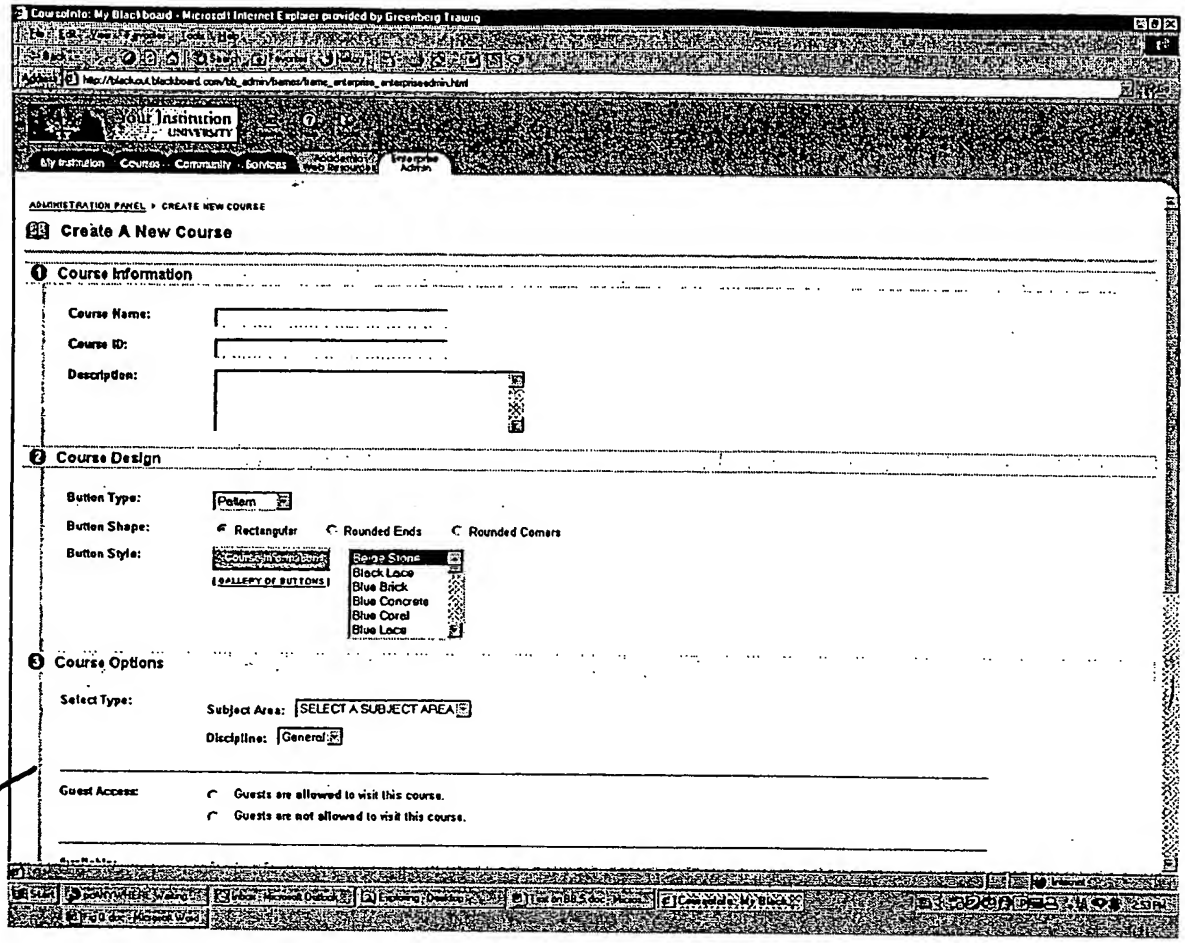
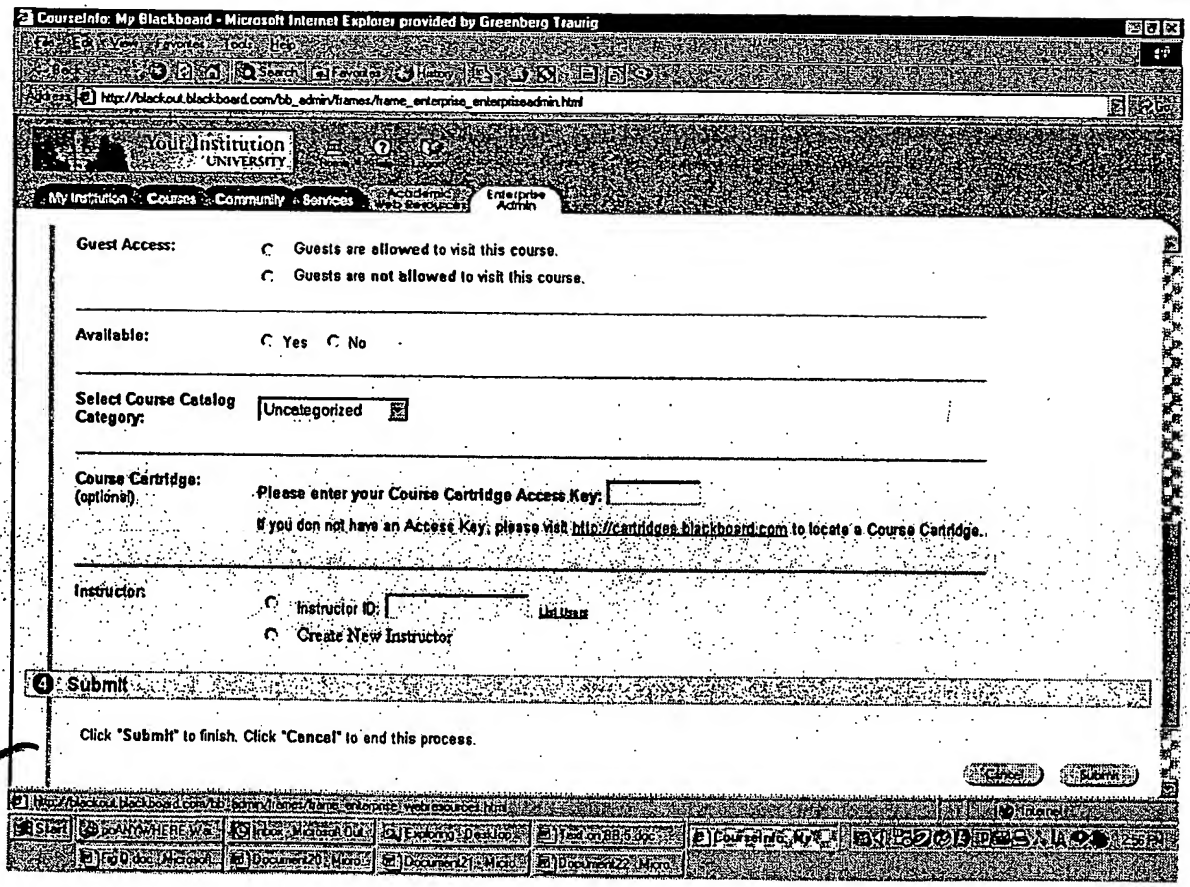

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://georgetown1/Blackout_v30r/bb_admin/frames/frame_enterprise_myblackboard.html
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
TOOLS
Home
e-Mail
Announcements
Calendar
Tasks
User Directory
Address Book
Course Grades
Personal Info
SEARCH THE WEB
Search the Web:
GO
advanced search
Email
Compose Mail
Address Book
Directory
Help
From
Subject
Date
Size
Customize this Interface
Check out the LDAP
What Next?
19:04
19:00
18:57
503 B
495 B

FIG. 28




2900




2900

FIG. 29

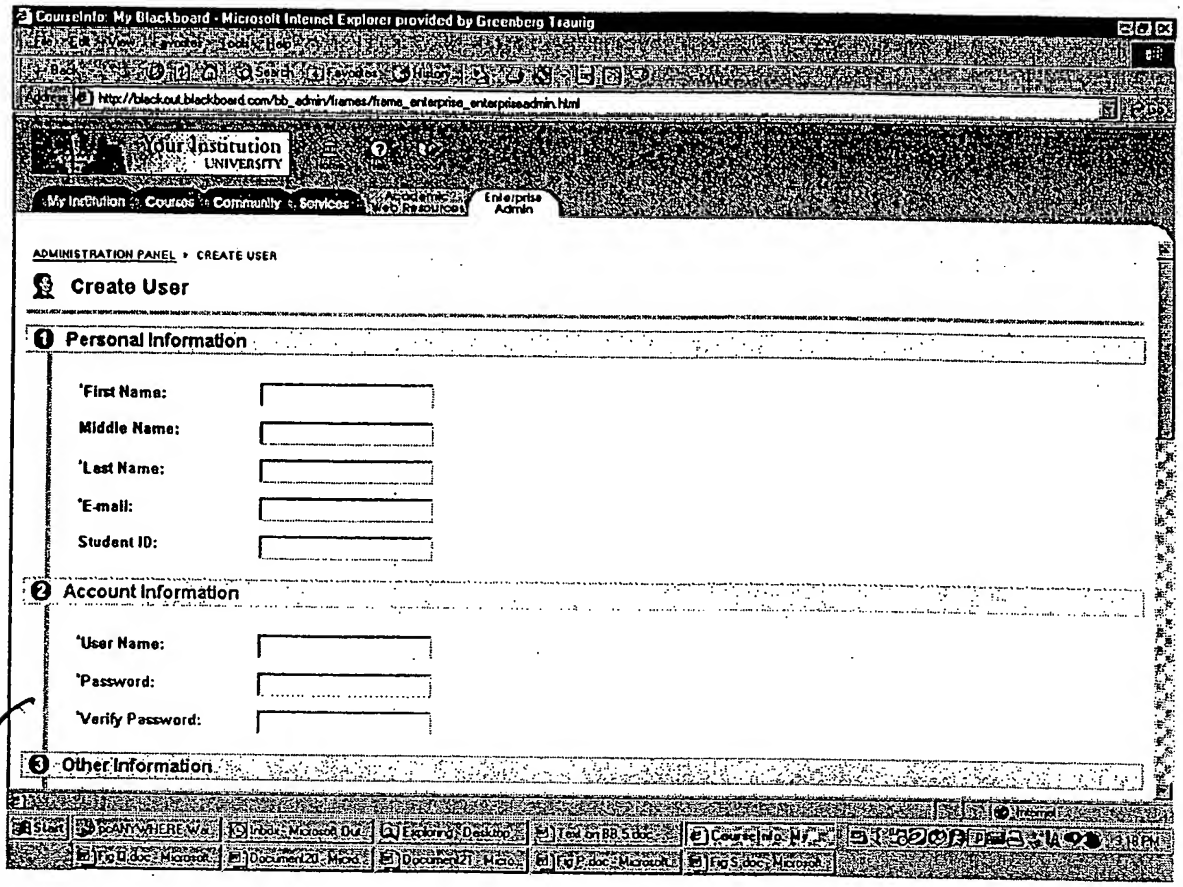
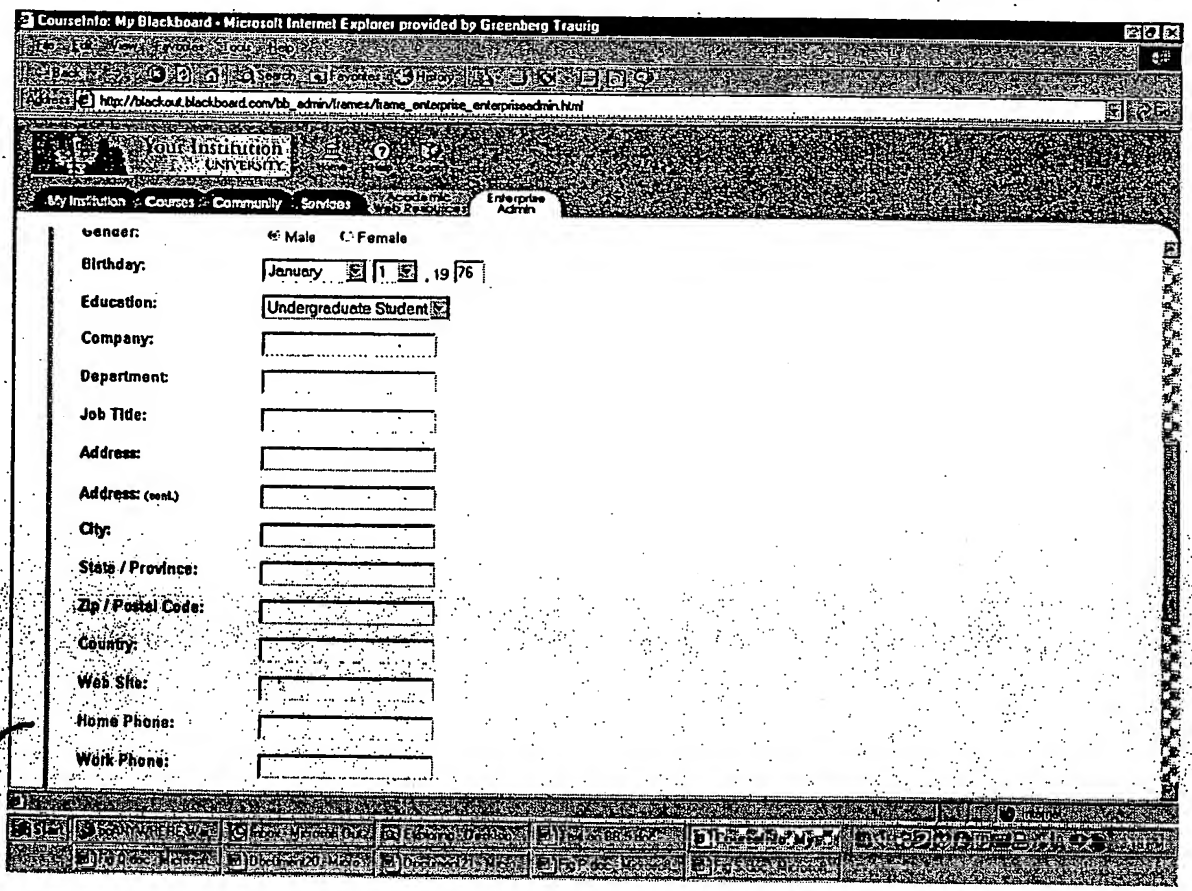

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/bb_admin/frames/frame_enterprise_enterpriseadmin.html
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
Enterprise Admin
ADMINISTRATION PANEL › CREATE USER
Create User
1 Personal Information
*First Name:
Middle Name:
*Last Name:
*E-mail:
Student ID:
2 Account Information
*User Name:
*Password:
*Verify Password:
3 Other Information
3000

FIG. 30A


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/bb_admin/frames/frame_enterprise_enterpriseadmin.html
Your Institution UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
Enterprise Admin
Gender:
Male
Female
Birthday:
January
1
19
76
Education:
Undergraduate Student
Company:
Department:
Job Title:
Address:
Address: (cont.)
City:
State / Province:
Zip / Postal Code:
Country:
Web Site:
Home Phone:
Work Phone:
3000

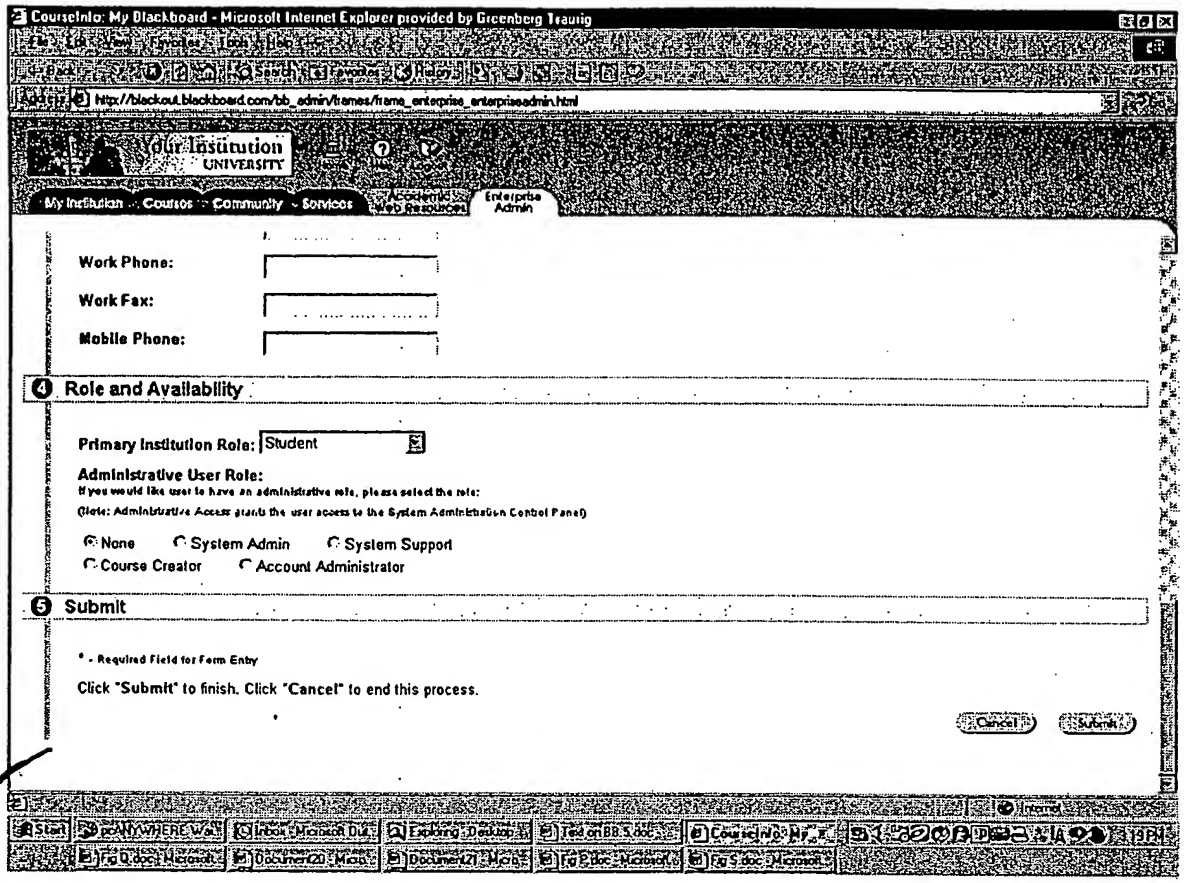

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Greenberg Traurig
http://blackout.blackboard.com/bb_admin/frames/frame_enterprise_enterpriseadmin.html
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
Enterprise Admin
Work Phone:
Work Fax:
Mobile Phone:
4 Role and Availability
Primary Institution Role: Student
Administrative User Role:
If you would like user to have an administrative role, please select the role:
(Note: Administrative Access grants the user access to the System Administration Control Panel)
None
System Admin
System Support
Course Creator
Account Administrator
5 Submit
* - Required Field for Form Entry
Click "Submit" to finish. Click "Cancel" to end this process.
Cancel
Submit
3000

FIG 30B

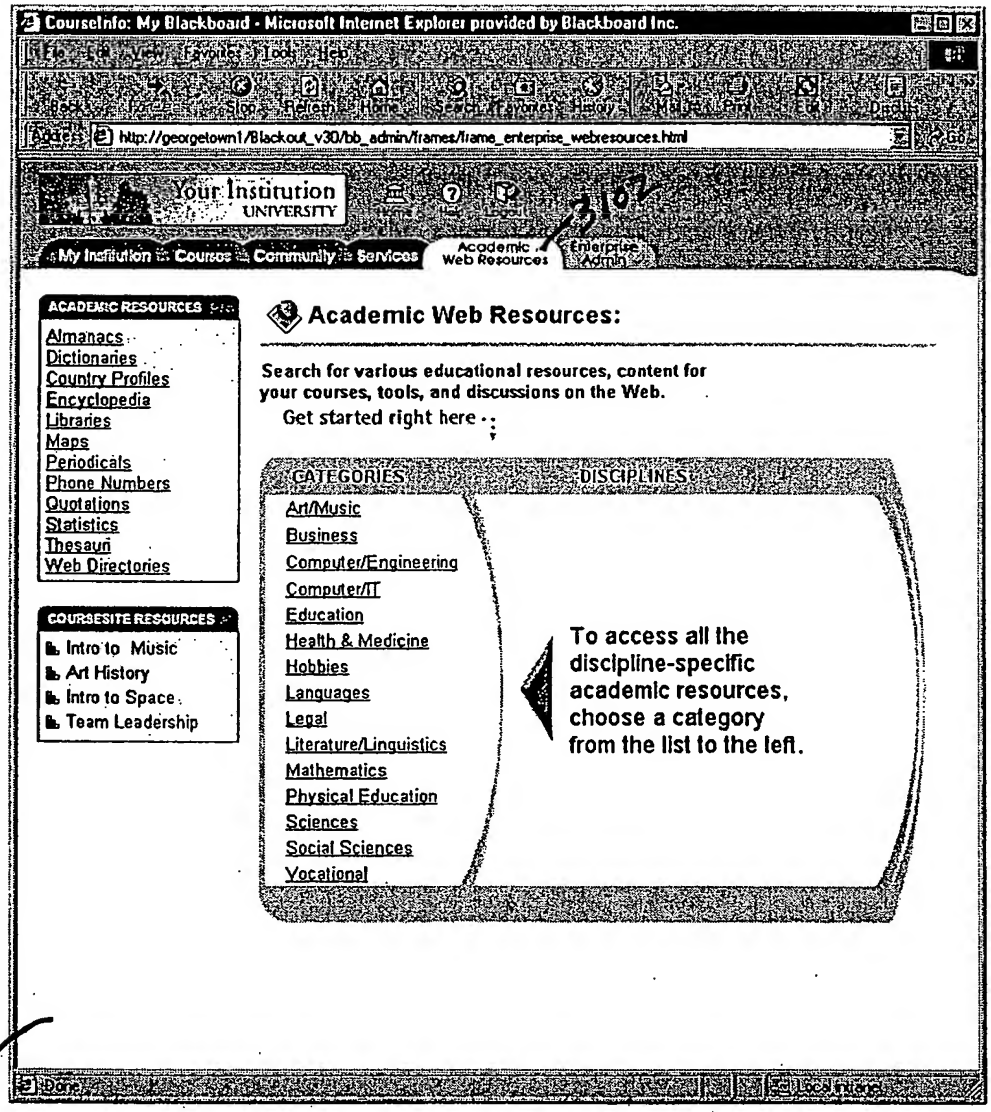
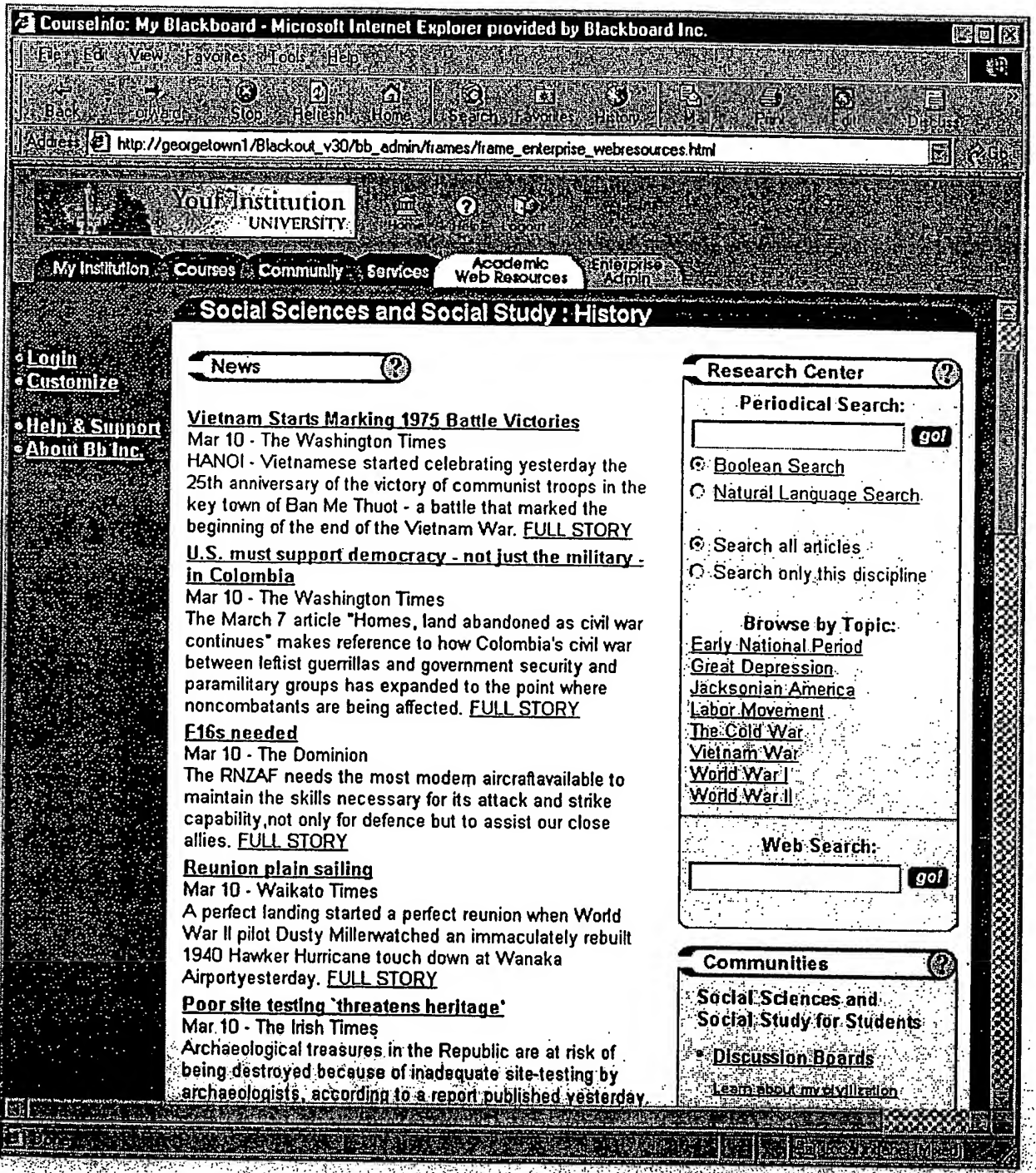

CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
http://georgetown1/Blackout_v30/bb_admin/frames/frame_enterprise_webresources.html
Your Institution
UNIVERSITY
My Institution
Courses
Community
Services
Academic Web Resources
Enterprise Admin
3102
ACADEMIC RESOURCES
Almanacs
Dictionaries
Country Profiles
Encyclopedia
Libraries
Maps
Periodicals
Phone Numbers
Quotations
Statistics
Thesauri
Web Directories
COURSESITE RESOURCES
Intro to Music
Art History
Intro to Space
Team Leadership
Academic Web Resources:
Search for various educational resources, content for your courses, tools, and discussions on the Web.
Get started right here
CATEGORIES
DISCIPLINES
Art/Music
Business
Computer/Engineering
Computer/IT
Education
Health & Medicine
Hobbies
Languages
Legal
Literature/Linguistics
Mathematics
Physical Education
Sciences
Social Sciences
Vocational
To access all the discipline-specific academic resources, choose a category from the list to the left.
Done
Local intranet
3100

FIG. 31


CourseInfo: My Blackboard - Microsoft Internet Explorer provided by Blackboard Inc.
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://georgetown1/Blackout_v30/bb_admin/frames/frame_enterprise_webresources.html
Your Institution
UNIVERSITY
Home Help Logout
My Institution Courses Community Services Academic Web Resources Enterprise Admin
Social Sciences and Social Study : History
Login
Customize
Help & Support
About Bb Inc.
News
Vietnam Starts Marking 1975 Battle Victories
Mar 10 - The Washington Times
HANOI - Vietnamese started celebrating yesterday the 25th anniversary of the victory of communist troops in the key town of Ban Me Thuot - a battle that marked the beginning of the end of the Vietnam War. FULL STORY
U.S. must support democracy - not just the military - in Colombia
Mar 10 - The Washington Times
The March 7 article "Homes, land abandoned as civil war continues" makes reference to how Colombia's civil war between leftist guerrillas and government security and paramilitary groups has expanded to the point where noncombatants are being affected. FULL STORY
F16s needed
Mar 10 - The Dominion
The RNZAF needs the most modern aircraftavailable to maintain the skills necessary for its attack and strike capability,not only for defence but to assist our close allies. FULL STORY
Reunion plain sailing
Mar 10 - Waikato Times
A perfect landing started a perfect reunion when World War II pilot Dusty Millerwatched an immaculately rebuilt 1940 Hawker Hurricane touch down at Wanaka Airportyesterday. FULL STORY
Poor site testing 'threatens heritage'
Mar 10 - The Irish Times
Archaeological treasures in the Republic are at risk of being destroyed because of inadequate site-testing by archaeologists, according to a report published yesterday.
Research Center
Periodical Search:
go!
Boolean Search
Natural Language Search
Search all articles
Search only this discipline
Browse by Topic:
Early National Period
Great Depression
Jacksonian America
Labor Movement
The Cold War
Vietnam War
World War I
World War II
Web Search:
go!
Communities
Social Sciences and Social Study for Students
Discussion Boards
Learn about my civilization

3200

FIG. 32

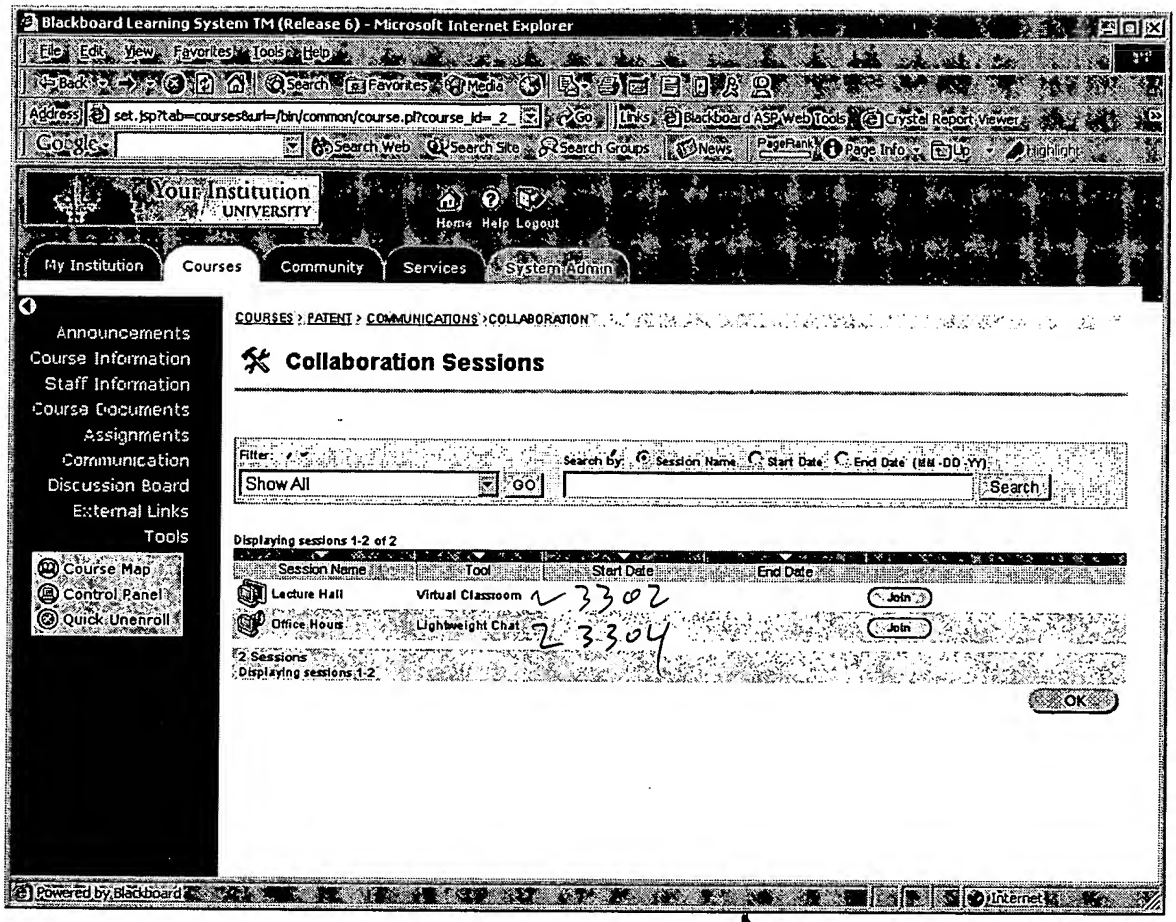

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
Your Institution UNIVERSITY
Home Help Logout
My Institution
Courses
Community
Services
System Admin
Announcements
Course Information
Staff Information
Course Documents
Assignments
Communication
Discussion Board
External Links
Tools
Course Map
Control Panel
Quick Unenroll
COURSES > PATENT > COMMUNICATIONS > COLLABORATION
Collaboration Sessions
Filter:
Show All
GO
Search by: Session Name Start Date End Date (MM-DD-YY)
Search
Displaying sessions 1-2 of 2
Session Name
Tool
Start Date
End Date
Lecture Hall
Virtual Classroom
3302
Join
Office Hours
Lightweight Chat
3304
Join
2 Sessions
Displaying sessions 1-2
OK
Powered by Blackboard
Internet
3300

Figure 33A.

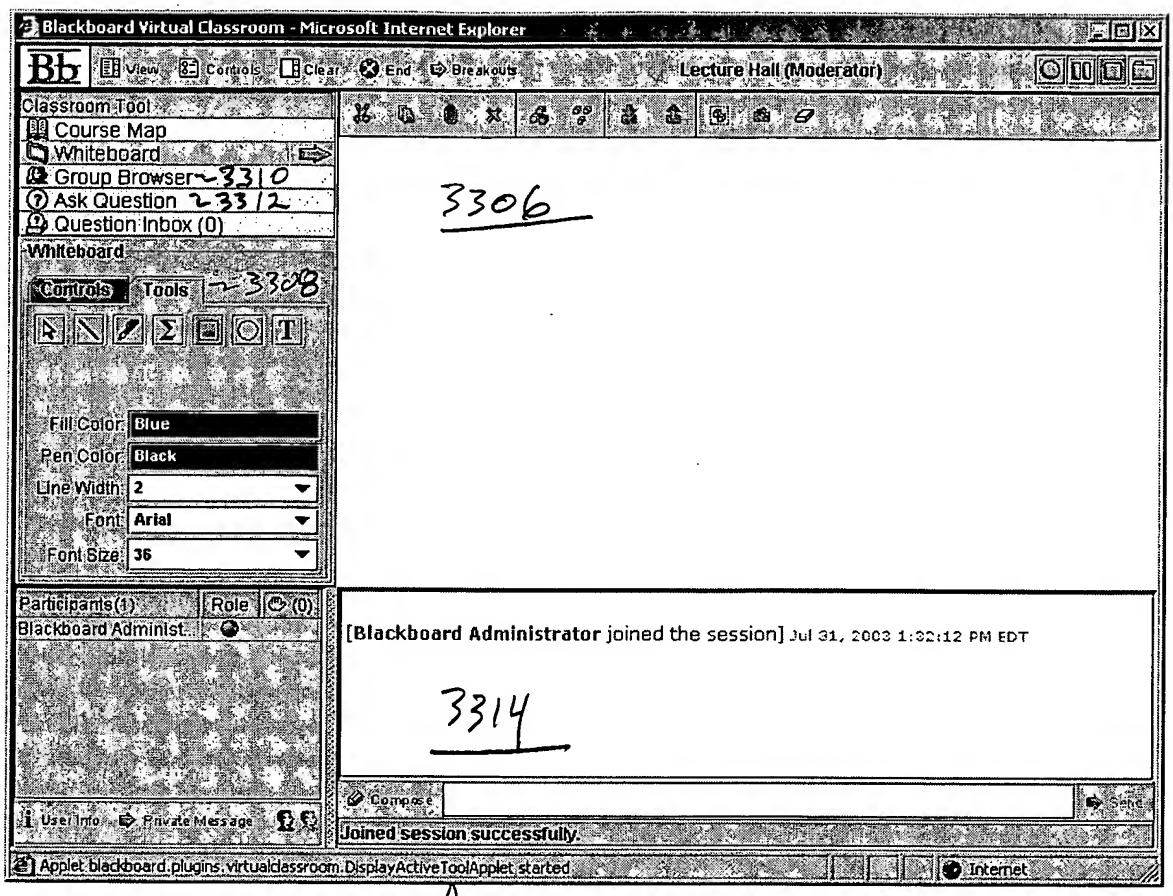
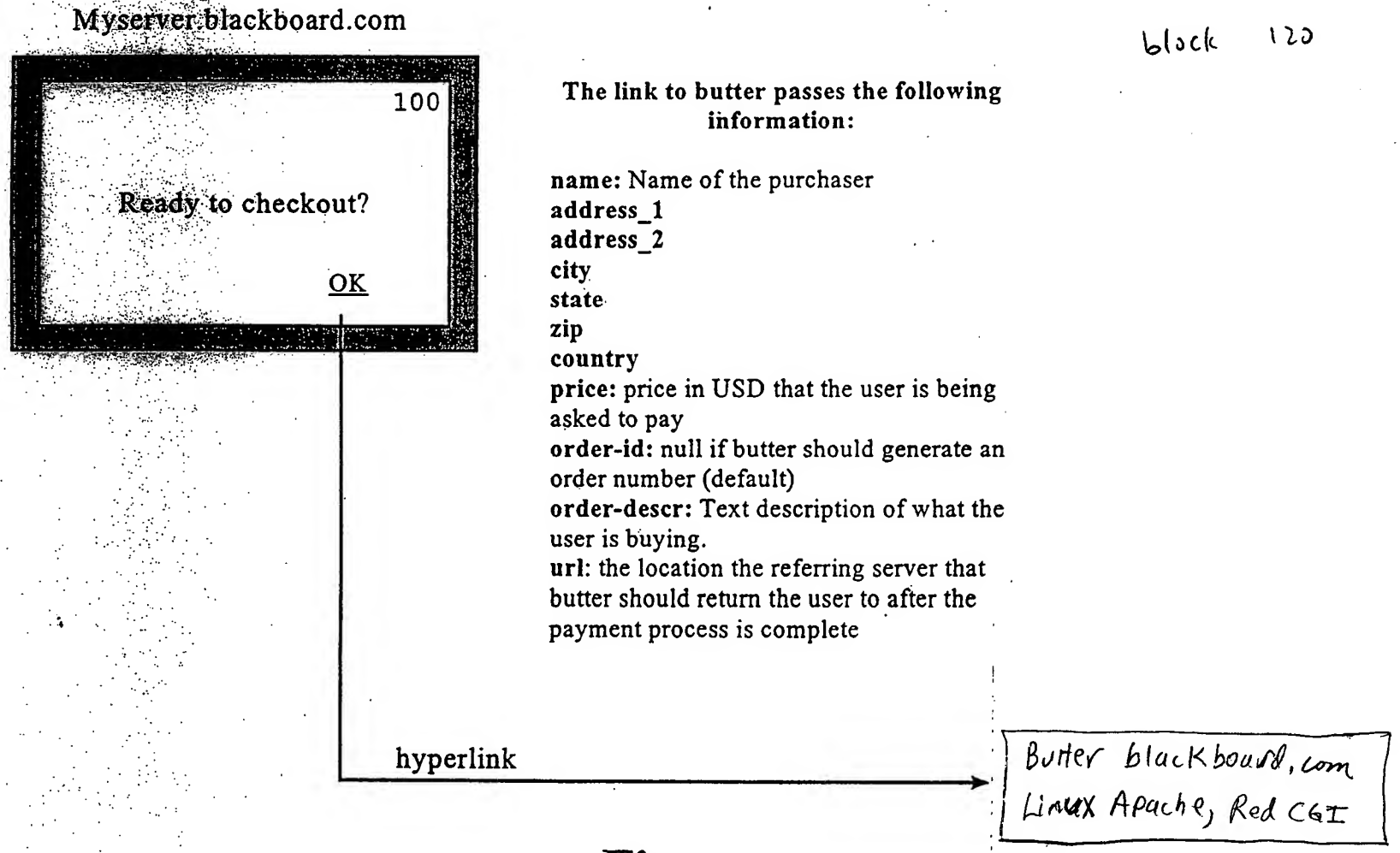

Blackboard Virtual Classroom - Microsoft Internet Explorer
View
Controls
Clear
End
Breakouts
Lecture Hall (Moderator)
Classroom Tool
Course Map
Whiteboard
Group Browser
Ask Question
Question Inbox (0)
3310
2312
3306
Whiteboard
Controls
Tools
3308
Fill Color: Blue
Pen Color: Black
Line Width: 2
Font: Arial
Font Size: 36
Participants(1)
Role
(0)
Blackboard Administ...
User Info
Private Message
[Blackboard Administrator joined the session] Jul 31, 2003 1:32:12 PM EDT
3314
Compose
Send
Joined session successfully.
Applet blackboard.plugins.virtualclassroom.DisplayActiveToolApplet started
Internet
3450

Figure 33B

# Linking to the E-Commerce Server




block 120

**The link to butter passes the following information:**

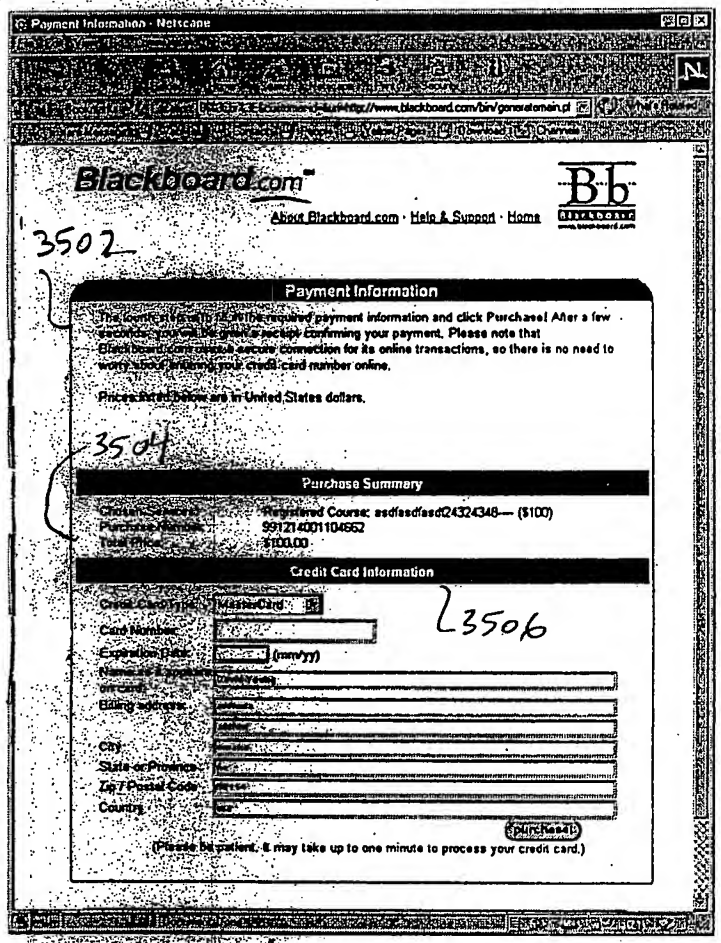
**name:** Name of the purchaser
**address_1**
**address_2**
**city**
**state**
**zip**
**country**
**price:** price in USD that the user is being asked to pay
**order-id:** null if butter should generate an order number (default)
**order-descr:** Text description of what the user is buying.
**url**: the location the referring server that butter should return the user to after the payment process is complete

**Figure**

34

# First E-Commerce Screen Display

Butter.blackboard.com




Accepts VISA, MC, Diner's Club, JCB and Carte Blanche (but not Amex)

Whatever user info is available is populated from the data passed from the previous page.

The unique order number displayed is dynamically generated by the server.

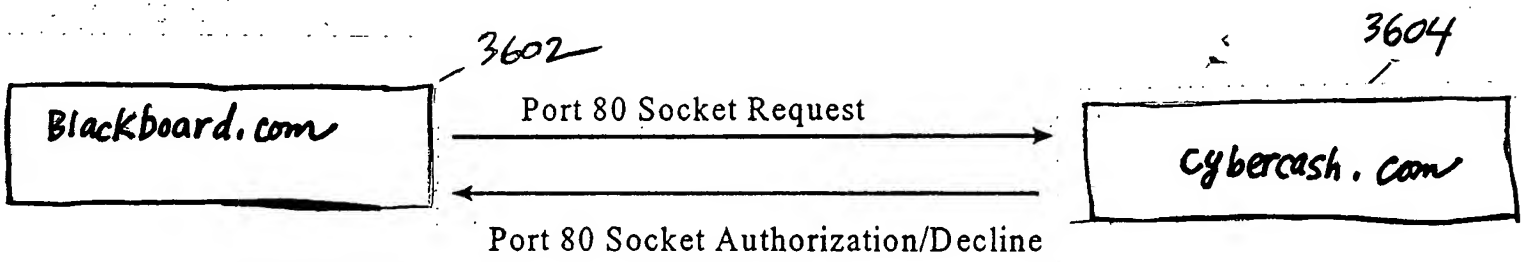
The Chosen services and price displayed are passed in from the previous screen.

The look and feel of this plate (and all butter e-commerce pages) can be modified by an HTML template. This template is selected as one of the script parameters.

**Figure**

35

# Authorization Process




- The authorization process takes a minute or so.
- If the card is rejected, a page like the one at right is displayed.
- If the card is accepted, the payment goes through, and the page on the next slide is shown.

3600

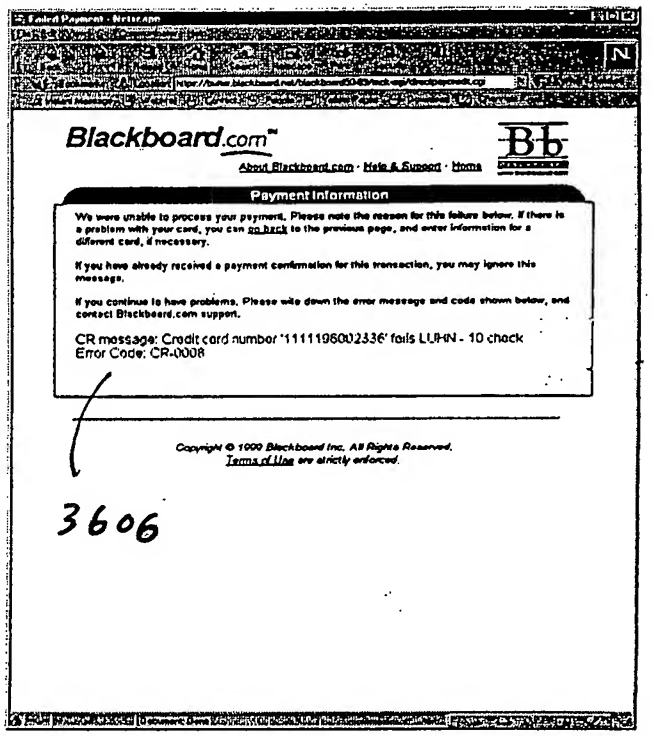
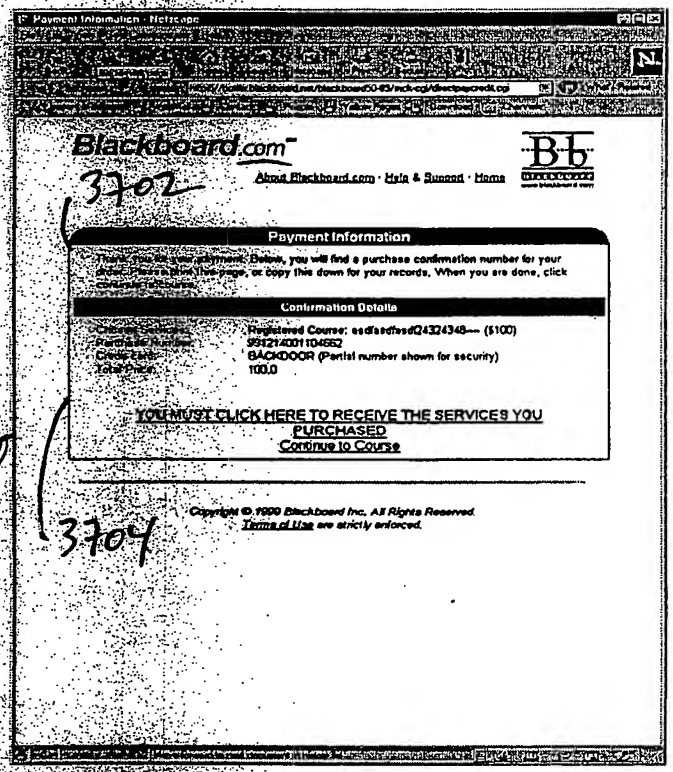



**Figure 36**

# Second E-Commerce Screen Display

Butter.blackboard.com




Payment is authorized and queued at Cybercash, Inc for processing.

The payment will go through and appear in Blackboard's Cybercash account within 12 hours.

There is no way that the user can back out at this point without Blackboard issuing a manual refund.

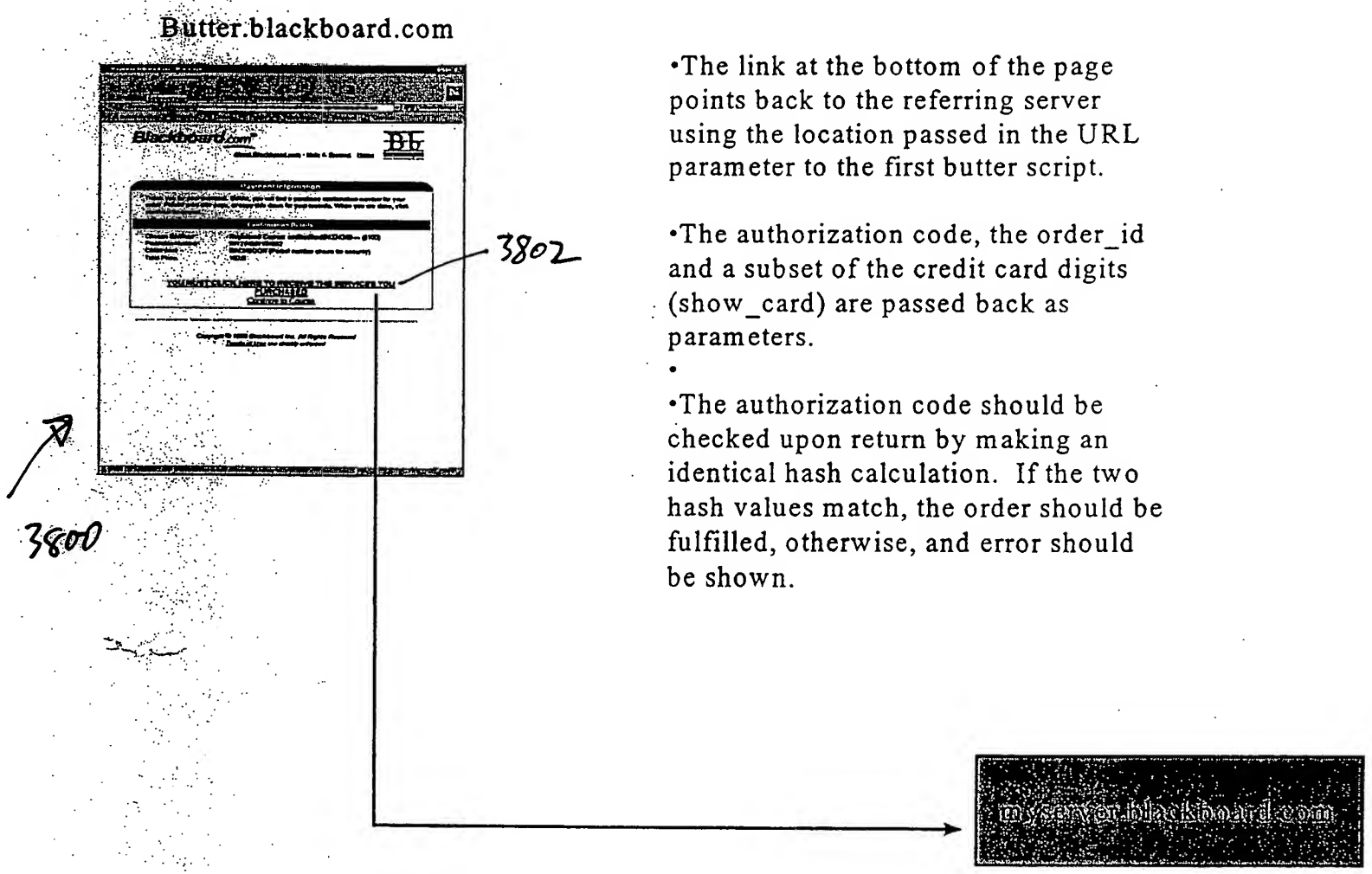
No services are provided yet. The user must follow the link at the bottom of the page, or he will receive nothing for his money.

All links on this page are disabled except the one that says "YOU MUST CLICK HERE". This prevents users from failing to get their orders filled.

A authorization code is calculated by the script as a secure hash of the purchase price, the order id, and a secret number.

**Figure 37**

# Returning to the Originating Server




- The link at the bottom of the page points back to the referring server using the location passed in the URL parameter to the first butter script.

- The authorization code, the order_id and a subset of the credit card digits (show_card) are passed back as parameters.

- The authorization code should be checked upon return by making an identical hash calculation. If the two hash values match, the order should be fulfilled, otherwise, and error should be shown.

**Figure**

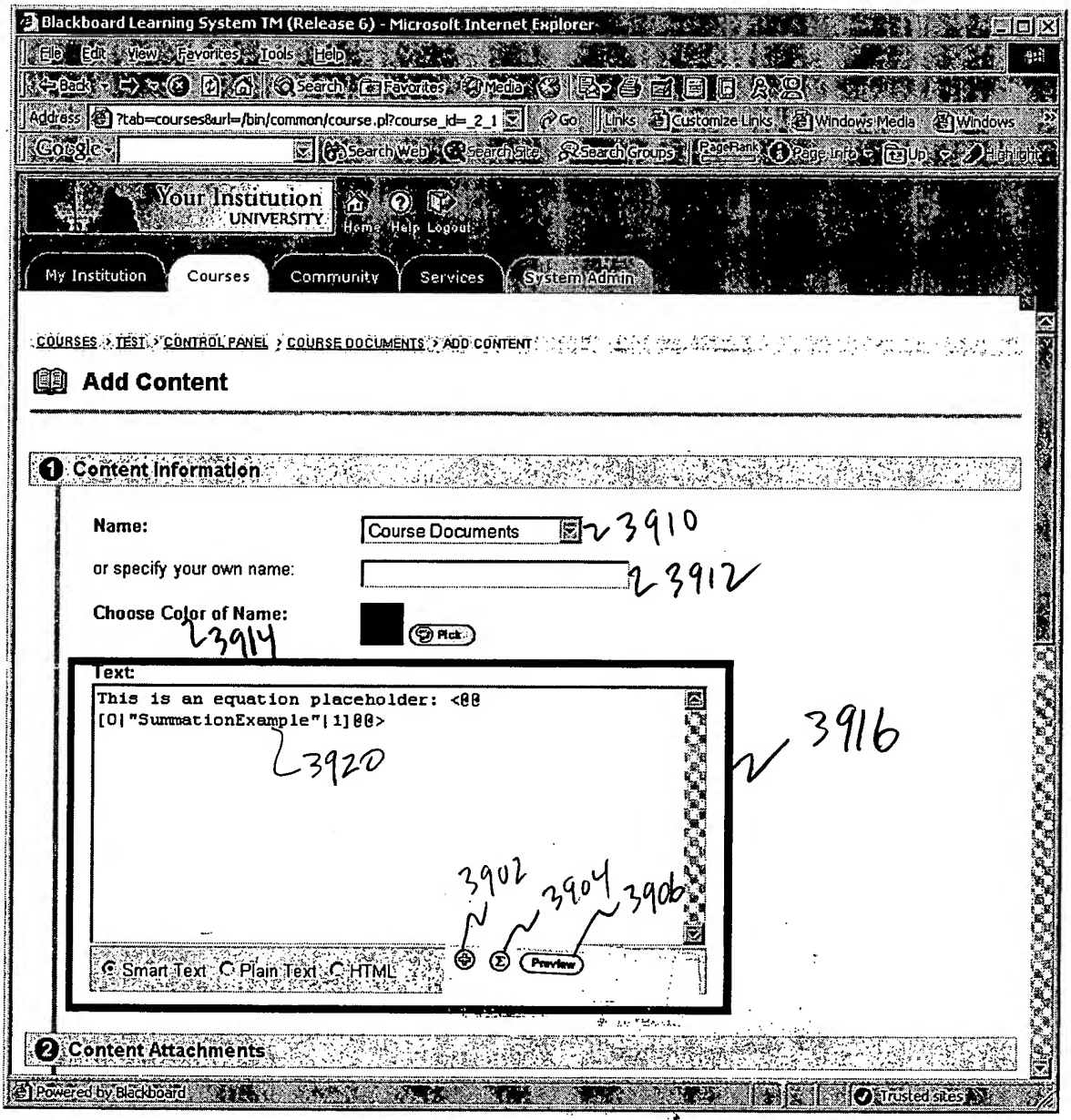



**Figure 39**

**Sample Text Editor**

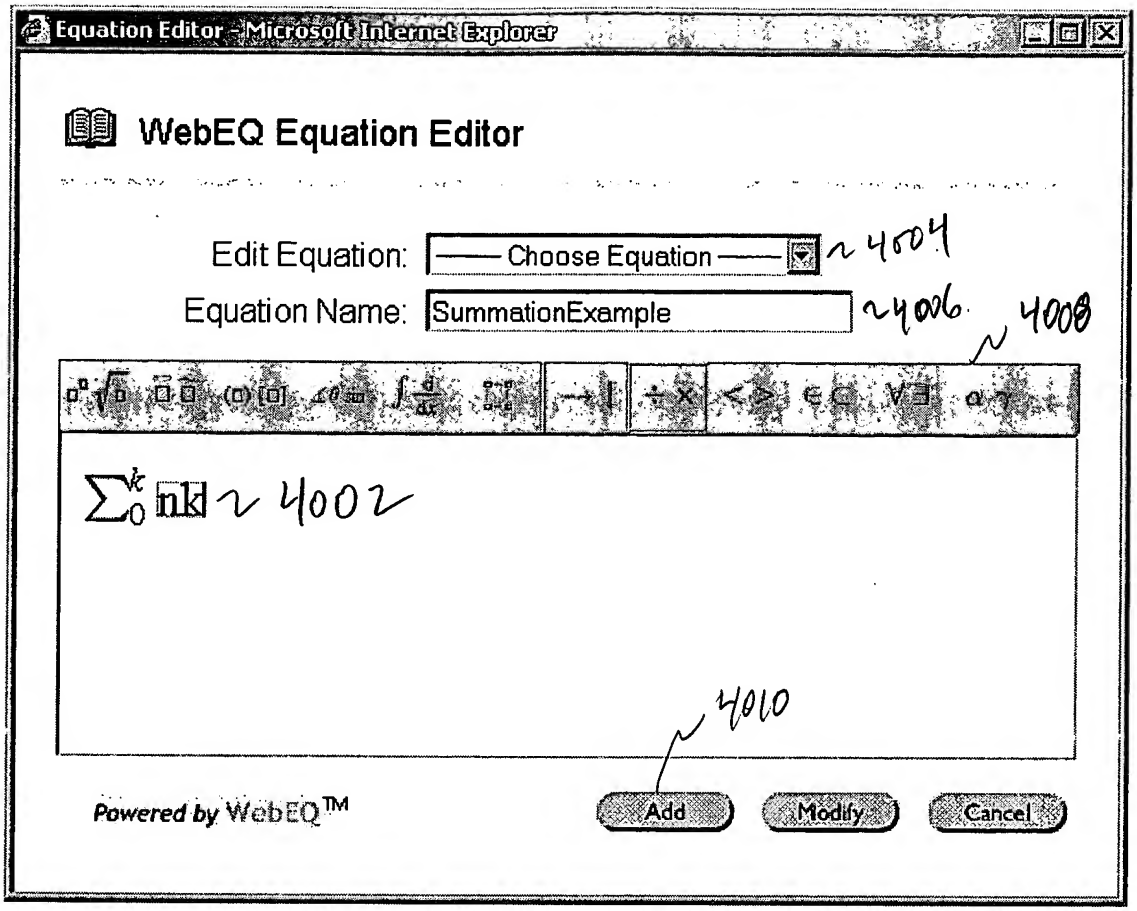



**Figure 40**

**Sample Text Tool (integrated into Blackboard)**

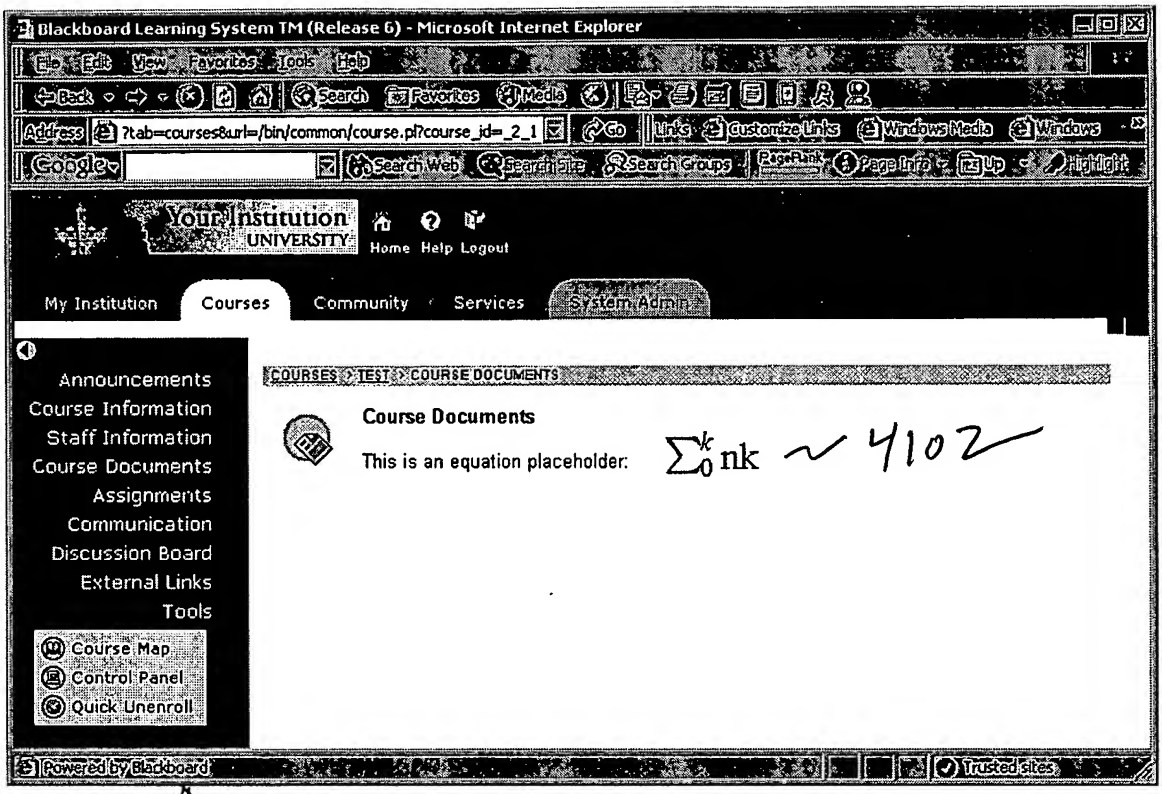



**Figure 41**

**Rendered Data**

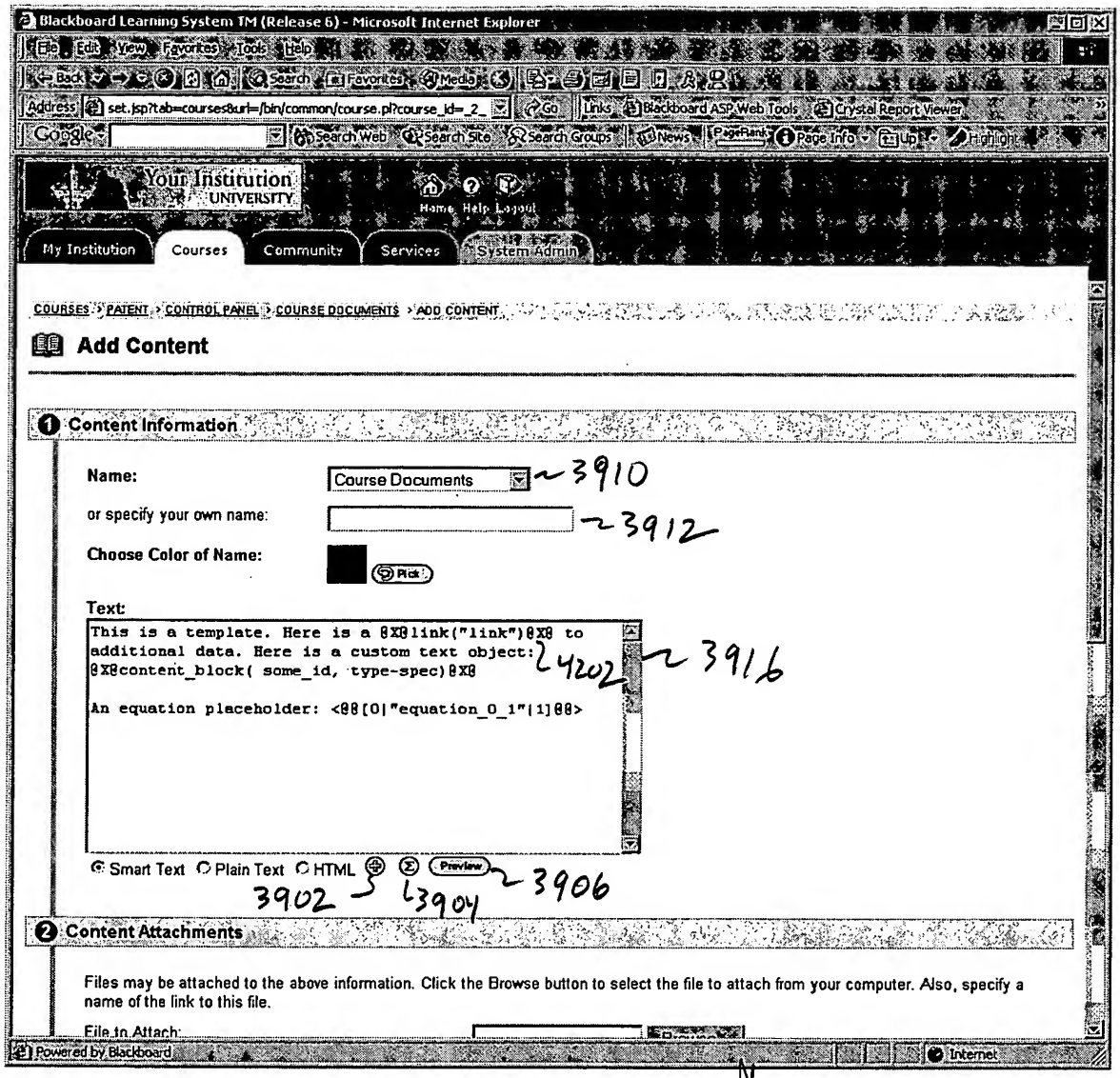



Figure 42.

~4200

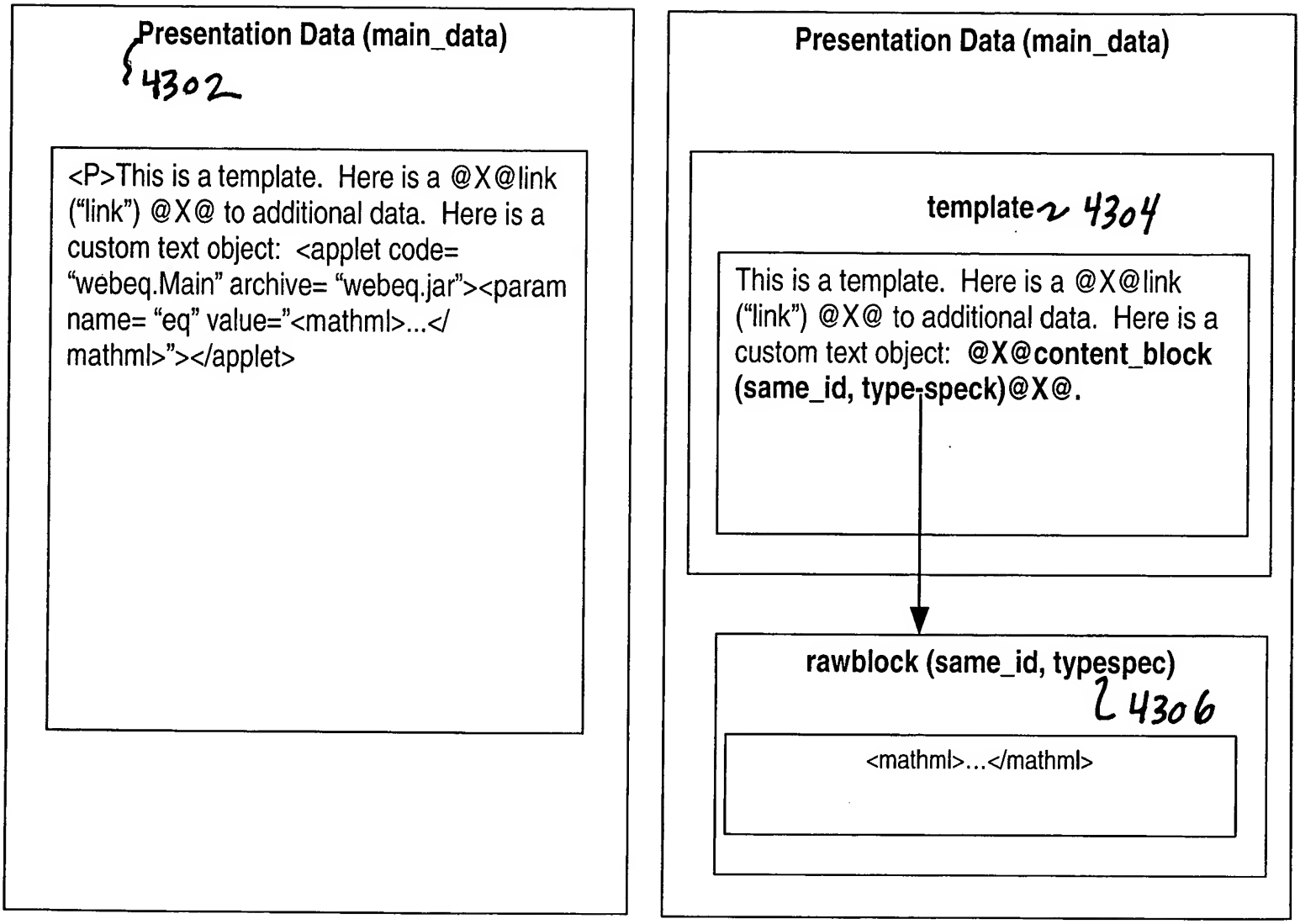

Presentation Data (main_data)
4302
<P>This is a template. Here is a @X@link ("link") @X@ to additional data. Here is a custom text object: <applet code= "webeq.Main" archive= "webeq.jar"><param name= "eq" value="<mathml>...</ mathml>"></applet>
Presentation Data (main_data)
template 4304
This is a template. Here is a @X@link ("link") @X@ to additional data. Here is a custom text object: @X@content_block (same_id, type-speck)@X@.
rawblock (same_id, typespec)
4306
<mathml>...</mathml>

FIG. 43

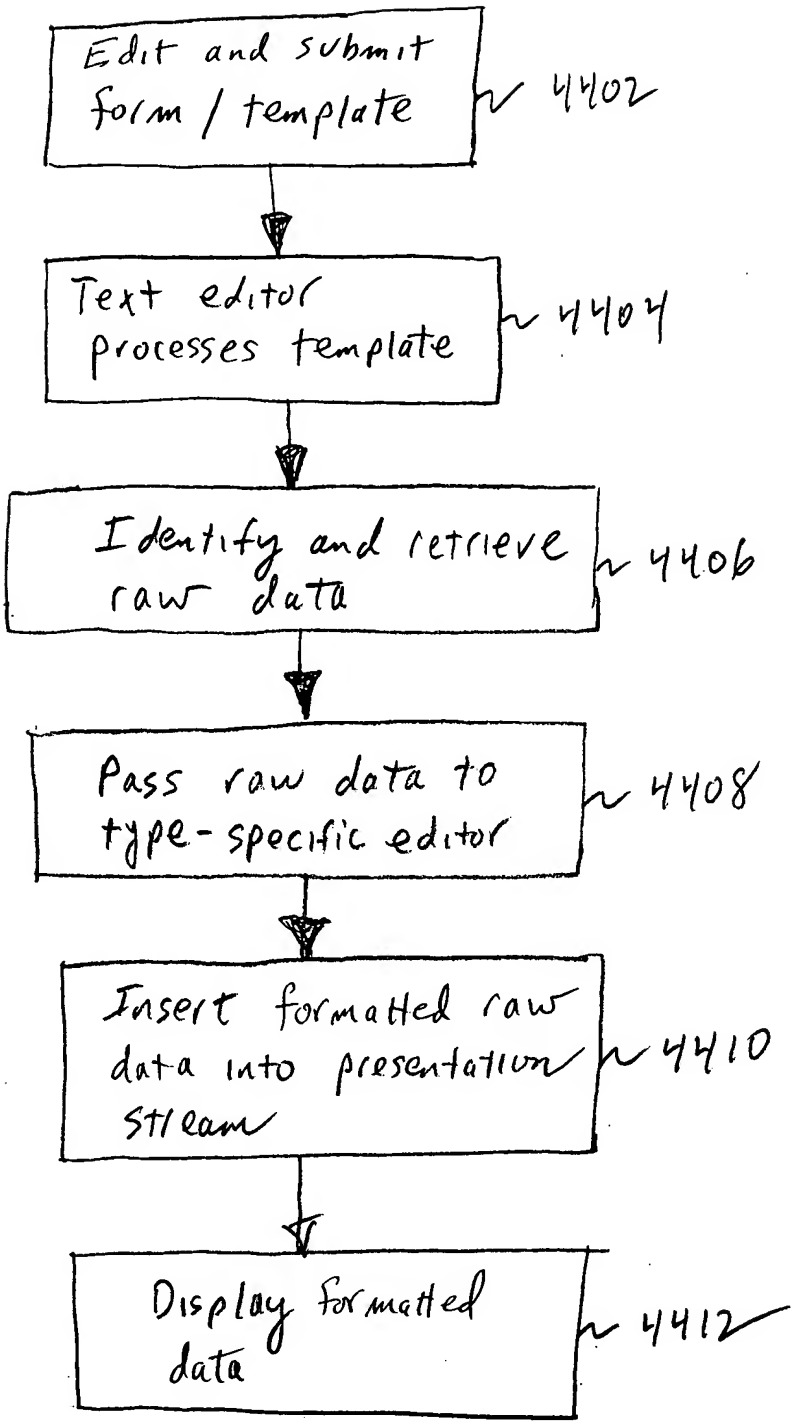

Edit and submit form / template
4402
Text editor processes template
4404
Identify and retrieve raw data
4406
Pass raw data to type-specific editor
4408
Insert formatted raw data into presentation stream
4410
Display formatted data
4412

Fig. 44

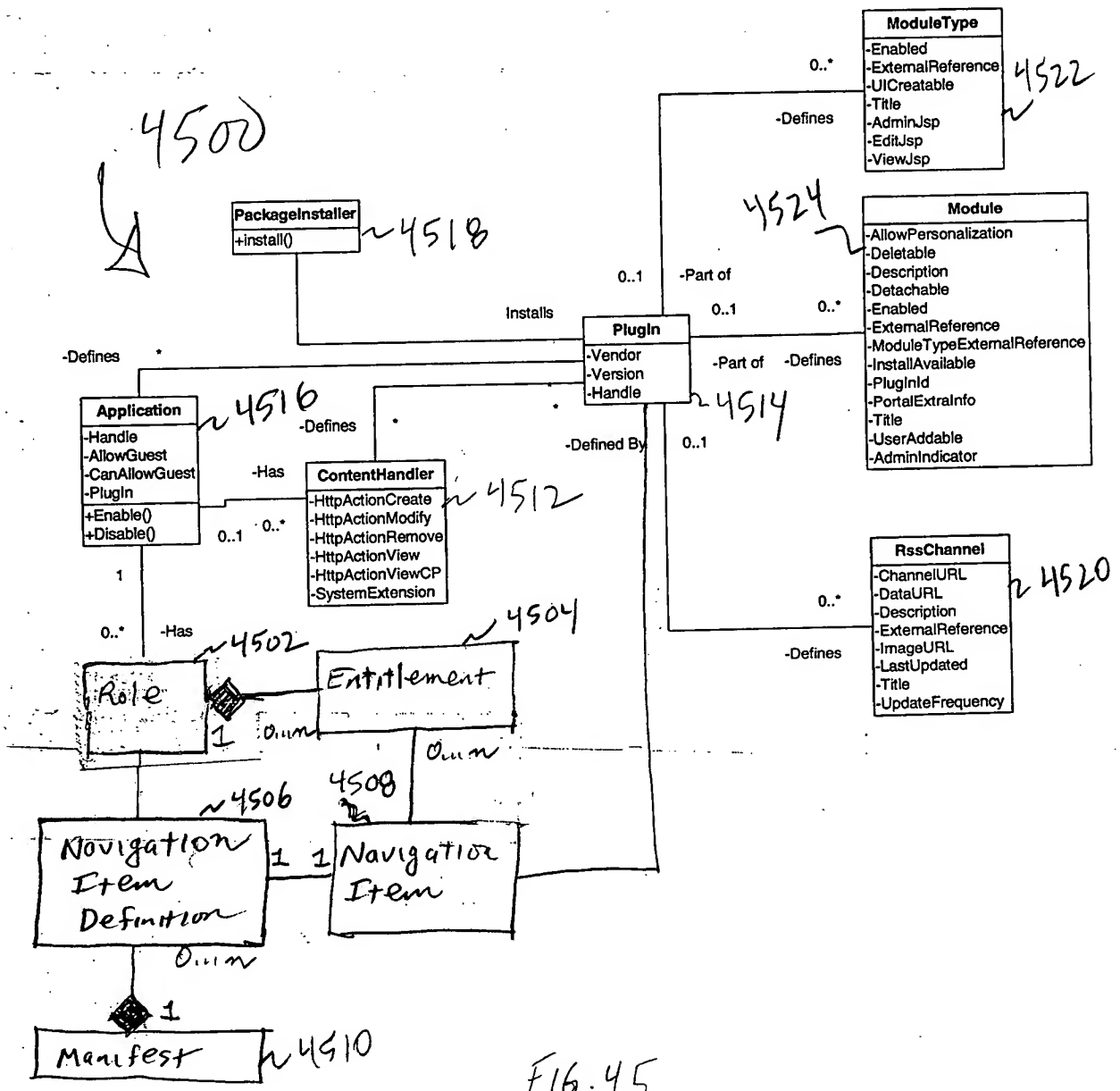

4500
PackageInstaller
+install()
4518
Installs
ModuleType
-Enabled
-ExternalReference
-UICreatable
-Title
-AdminJsp
-EditJsp
-ViewJsp
4522
0..*
-Defines
4524
Module
-AllowPersonalization
-Deletable
-Description
-Detachable
-Enabled
-ExternalReference
-ModuleTypeExternalReference
-InstallAvailable
-PluginId
-PortalExtraInfo
-Title
-UserAddable
-AdminIndicator
0..1
-Part of
0..1
0..*
PlugIn
-Vendor
-Version
-Handle
4514
-Part of
-Defines
-Defines
-Defined By
0..1
Application
-Handle
-AllowGuest
-CanAllowGuest
-PlugIn
+Enable()
+Disable()
4516
-Defines
-Has
ContentHandler
-HttpActionCreate
-HttpActionModify
-HttpActionRemove
-HttpActionView
-HttpActionViewCP
-SystemExtension
4512
0..1
0..*
1
0..*
-Has
4502
Role
4504
Entitlement
1
0..n
0..n
4508
4506
Navigation Item Definition
1
1
Navigation Item
0..n
1
Manifest
4510
RssChannel
-ChannelURL
-DataURL
-Description
-ExternalReference
-ImageURL
-LastUpdated
-Title
-UpdateFrequency
4520
0..*
-Defines

FIG. 45

| User Name | | | Role(s) | Entitlement |
|---|---|---|---|---|
| Last | First | M.I. | | |
| Jones | Allan | S. | A, I | course. modify<br>calendar. modify |
| Smith | Jane | T. | C, T | course. modify<br>calendar. modify |
| ⋮ | | | | |
| Lee | Alex | Y. | O | course. view |

4602

FIG. 46

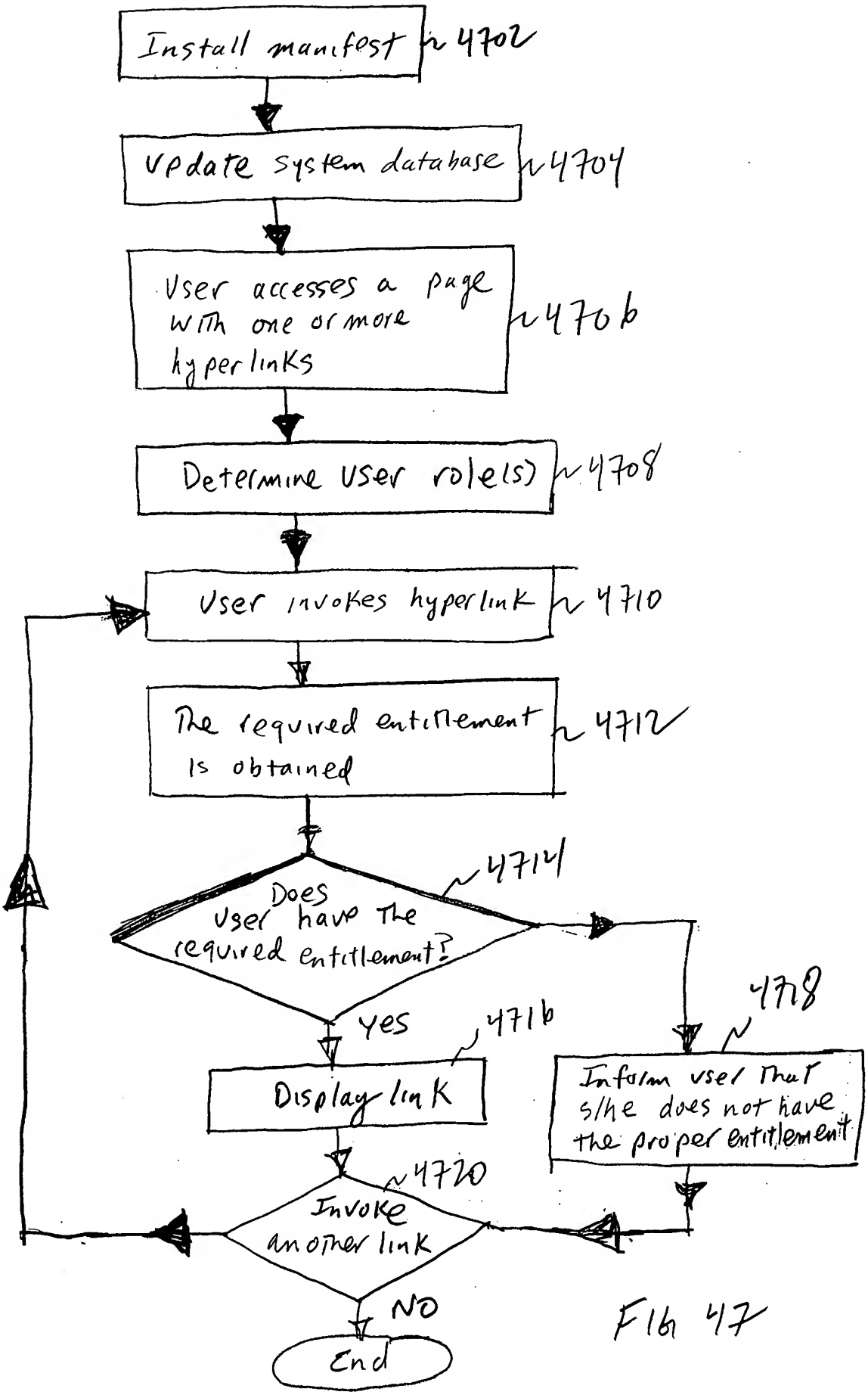

Install manifest
4702
Update system database
4704
User accesses a page with one or more hyperlinks
4706
Determine User role(s)
4708
User invokes hyperlink
4710
The required entitlement is obtained
4712
Does User have the required entitlement?
4714
yes
4716
Display link
4718
Inform user that s/he does not have the proper entitlement
4720
Invoke another link
NO
End

Fig 47

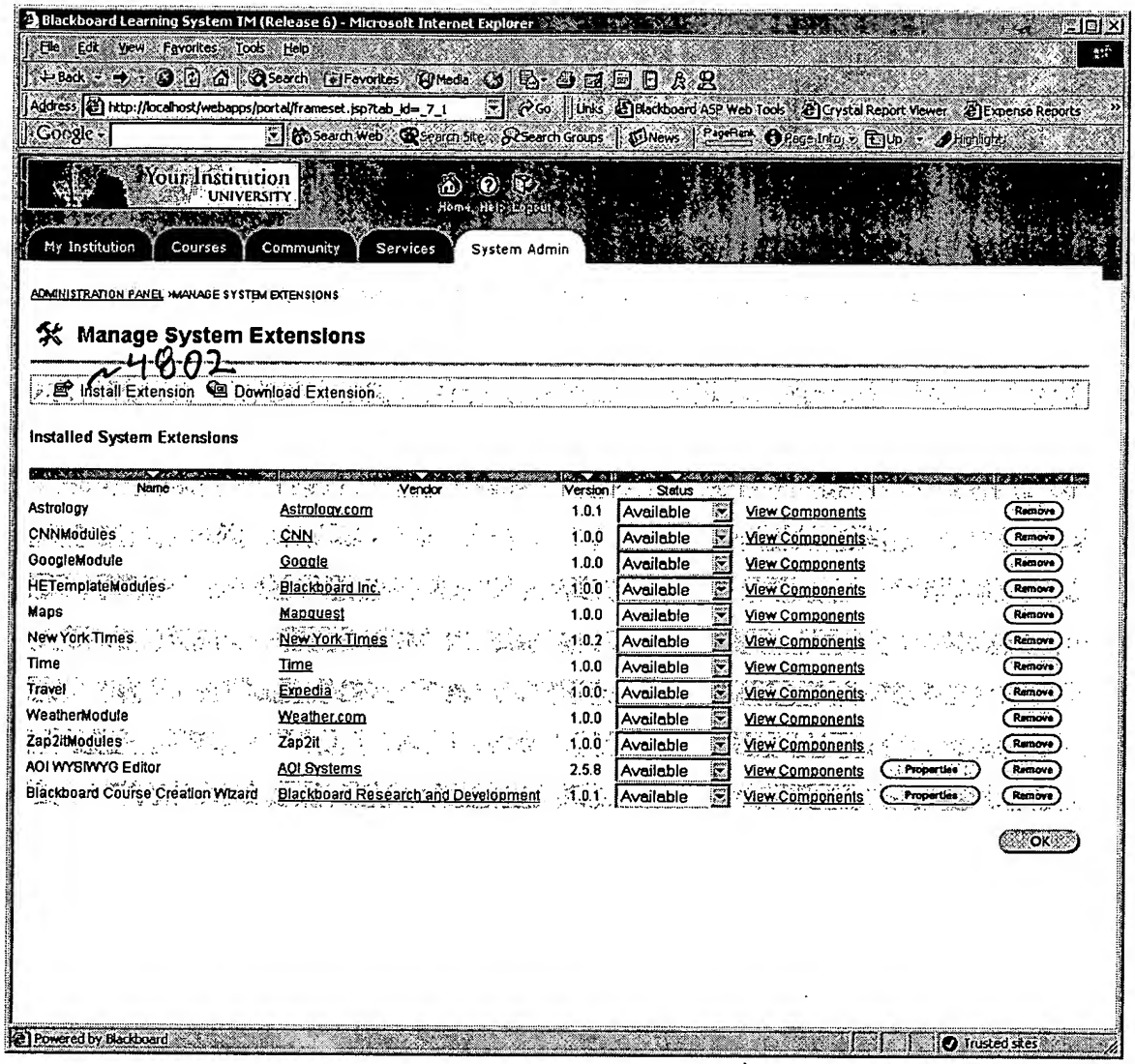

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://localhost/webapps/portal/frameset.jsp?tab_id=_7_1
Your Institution UNIVERSITY
Home Help Logout
My Institution Courses Community Services System Admin
ADMINISTRATION PANEL >MANAGE SYSTEM EXTENSIONS
Manage System Extensions
4802
Install Extension Download Extension
Installed System Extensions
Name Vendor Version Status
Astrology Astrology.com 1.0.1 Available View Components Remove
CNNModules CNN 1.0.0 Available View Components Remove
GoogleModule Google 1.0.0 Available View Components Remove
HETemplateModules Blackboard Inc. 1.0.0 Available View Components Remove
Maps Mapquest 1.0.0 Available View Components Remove
New York Times New York Times 1.0.2 Available View Components Remove
Time Time 1.0.0 Available View Components Remove
Travel Expedia 1.0.0 Available View Components Remove
WeatherModule Weather.com 1.0.0 Available View Components Remove
Zap2itModules Zap2it 1.0.0 Available View Components Remove
AOI WYSIWYG Editor AOI Systems 2.5.8 Available View Components Properties Remove
Blackboard Course Creation Wizard Blackboard Research and Development 1.0.1 Available View Components Properties Remove
OK
Powered by Blackboard
Trusted sites

FIG. 48

4802

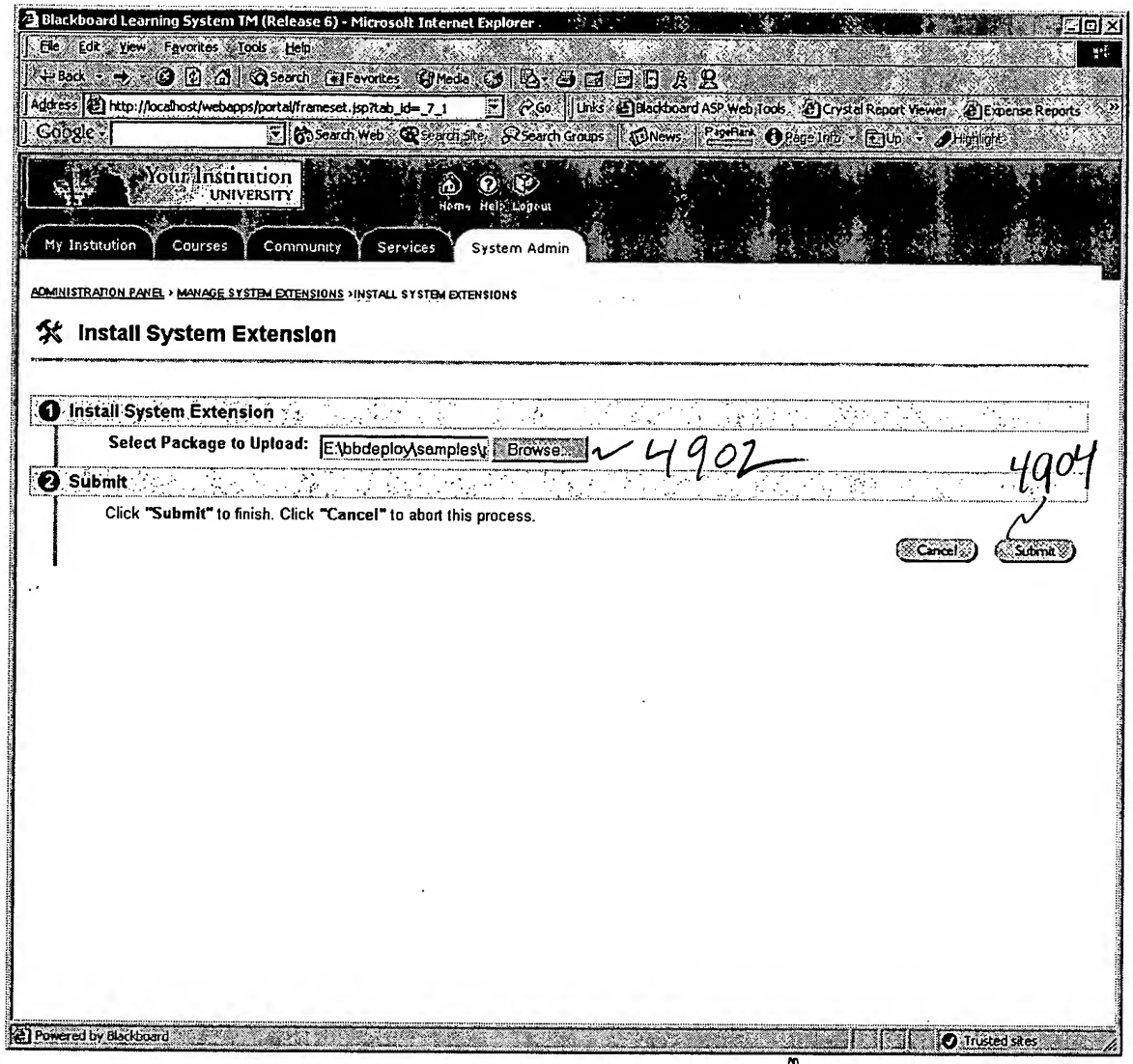

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://localhost/webapps/portal/frameset.jsp?tab_id=_7_1
Your Institution UNIVERSITY
Home Help Logout
My Institution Courses Community Services System Admin
ADMINISTRATION PANEL > MANAGE SYSTEM EXTENSIONS >INSTALL SYSTEM EXTENSIONS
Install System Extension
1 Install System Extension
Select Package to Upload: E:\bbdeploy\samples\ Browse...
4902
4904
2 Submit
Click "Submit" to finish. Click "Cancel" to abort this process.
Cancel
Submit
Powered by Blackboard
Trusted sites
4902

FIG. 49

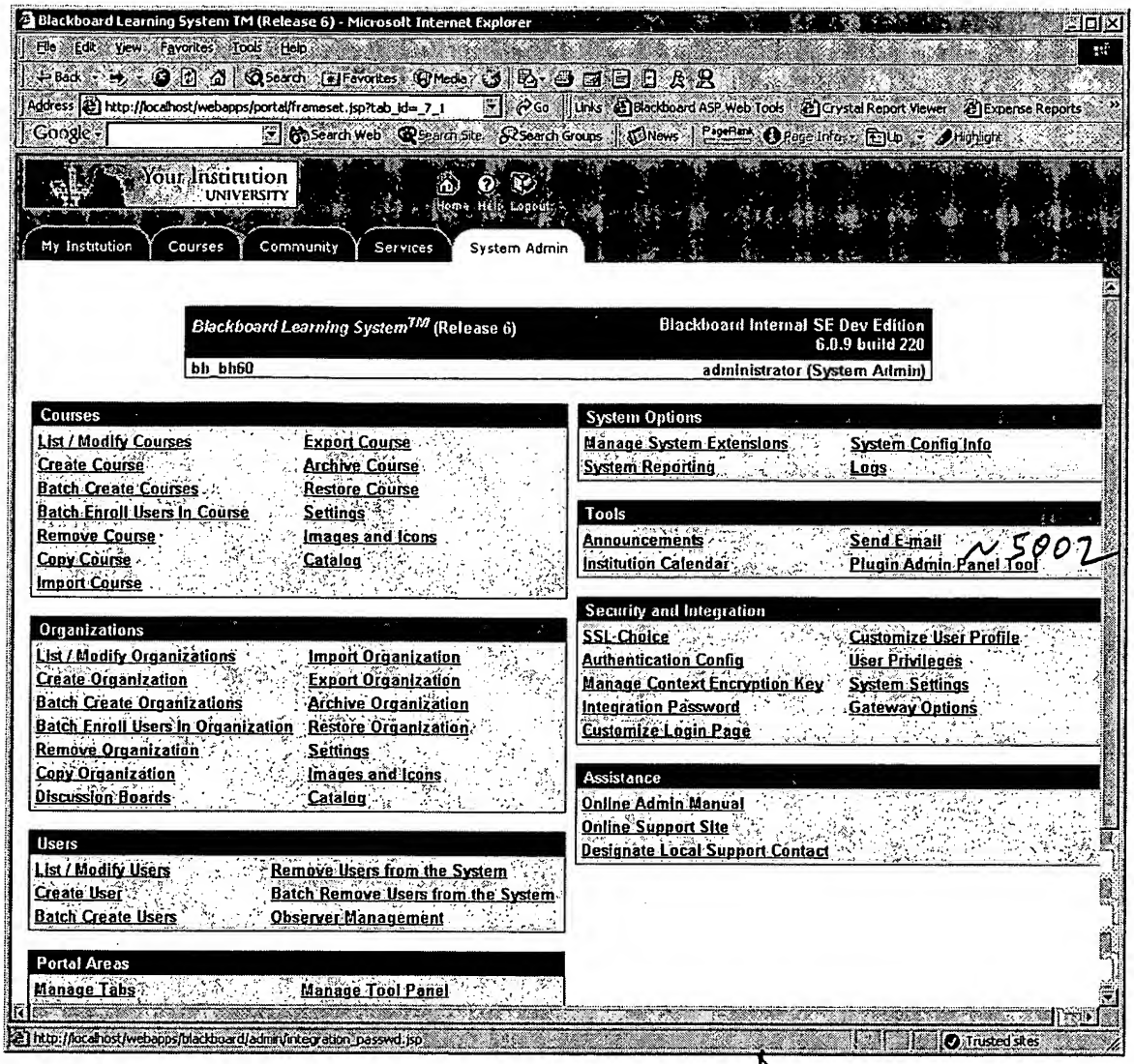

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://localhost/webapps/portal/frameset.jsp?tab_id=_7_1
Your Institution UNIVERSITY
Home Help Logout
My Institution Courses Community Services System Admin
Blackboard Learning System™ (Release 6)
Blackboard Internal SE Dev Edition 6.0.9 build 220
bb_bh60
administrator (System Admin)
Courses
List / Modify Courses
Create Course
Batch Create Courses
Batch Enroll Users in Course
Remove Course
Copy Course
Import Course
Export Course
Archive Course
Restore Course
Settings
Images and Icons
Catalog
Organizations
List / Modify Organizations
Create Organization
Batch Create Organizations
Batch Enroll Users in Organization
Remove Organization
Copy Organization
Discussion Boards
Import Organization
Export Organization
Archive Organization
Restore Organization
Settings
Images and Icons
Catalog
Users
List / Modify Users
Create User
Batch Create Users
Remove Users from the System
Batch Remove Users from the System
Observer Management
Portal Areas
Manage Tabs
Manage Tool Panel
System Options
Manage System Extensions
System Reporting
System Config Info
Logs
Tools
Announcements
Institution Calendar
Send E-mail
Plugin Admin Panel Tool
Security and Integration
SSL Choice
Authentication Config
Manage Context Encryption Key
Integration Password
Customize Login Page
Customize User Profile
User Privileges
System Settings
Gateway Options
Assistance
Online Admin Manual
Online Support Site
Designate Local Support Contact
http://localhost/webapps/blackboard/admin/integration_passwd.jsp
Trusted sites

FIG. 50

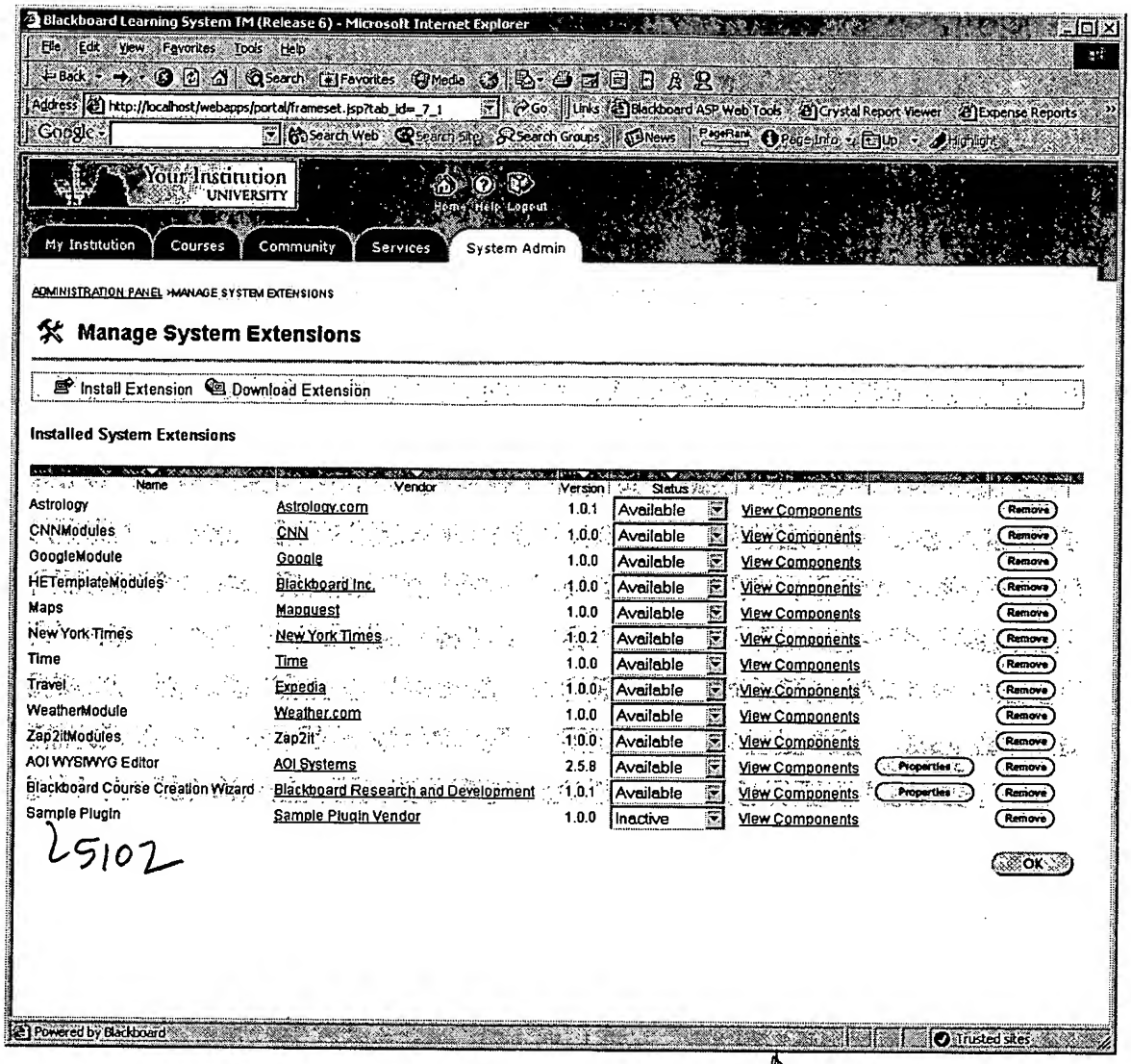

Blackboard Learning System TM (Release 6) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://localhost/webapps/portal/frameset.jsp?tab_id=_7_1
Your Institution UNIVERSITY
Home Help Logout
My Institution Courses Community Services System Admin
ADMINISTRATION PANEL >MANAGE SYSTEM EXTENSIONS
Manage System Extensions
Install Extension Download Extension
Installed System Extensions
Name Vendor Version Status
Astrology Astrology.com 1.0.1 Available View Components Remove
CNNModules CNN 1.0.0 Available View Components Remove
GoogleModule Google 1.0.0 Available View Components Remove
HETemplateModules Blackboard Inc. 1.0.0 Available View Components Remove
Maps Mapquest 1.0.0 Available View Components Remove
New York Times New York Times 1.0.2 Available View Components Remove
Time Time 1.0.0 Available View Components Remove
Travel Expedia 1.0.0 Available View Components Remove
WeatherModule Weather.com 1.0.0 Available View Components Remove
Zap2itModules Zap2it 1.0.0 Available View Components Remove
AOI WYSIWYG Editor AOI Systems 2.5.8 Available View Components Properties Remove
Blackboard Course Creation Wizard Blackboard Research and Development 1.0.1 Available View Components Properties Remove
Sample Plugin Sample Plugin Vendor 1.0.0 Inactive View Components Remove
25102
OK
Powered by Blackboard
Trusted sites
5107

FIG. 51